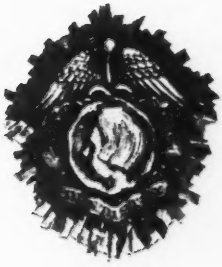
Journal of Dentistry for Children



FIRST QUARTER 1950

Journal of Dentistry for Children

PUBLISHED BY THE AMERICAN SOCIETY
OF DENTISTRY FOR CHILDREN

ALFRED E. SEYLER, D.D.S., F.A.C.D., *Editor*
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YOUR OFFICERS 1949-50

W. JAMES TAUB
President
Bogardus Lane
Hopewell Junction, New York

Our new President, W. James Taub, was born in Greenpoint, Brooklyn, December 6, 1902. His schooling was in Brooklyn and New York City, and he graduated from N. Y. U. College of Dentistry in 1924. After an externship of one year at Greenpoint Hospital, he engaged in private practice in New York City and Brooklyn until 1939. After a siege of illness lasting almost two years, he practiced in Ellenville, New York, until 1943, when he moved to Albany, where he practiced until his very recent move to Hopewell Junction, New York.

Bill's practice has always been divided rather equally between children and adults, and his election to the Presidency of the American Society of Dentistry for Children attests to the fact that our Society is not limited to, nor governed by pedodontists!

Bill has long been active in A. S. D. C. affairs, having served as Secretary and President of our New York Unit, and always attending our National Meetings, where he expressed himself emphatically on matters he held dear to his heart. He's a clear-thinking, persistent fellow, who intends to make this a banner year for our Society.

HUGO M. KULSTAD
President-Elect
760 Market Street
San Francisco 2, California

President-Elect Hugo M. Kulstad was born in Mason, Wisconsin, August 2, 1899, of Norwegian parents. He completed high school requirements in 1919, after a two-year stretch in the Navy, during World War I, and graduated from Marquette University School of Dentistry in 1923. After passing the Oregon State Board in 1923, he practiced in Bend, Oregon, until 1929, when he moved to Los Angeles and took post-graduate work at the U. of S. C. Dental School. In 1930 he opened an office in Hollywood, California, where he practiced until 1945. At present he is Chief of the Division of Dental Health, California State Department of Health.

Hugo has served on so many committees of organized dentistry, as member or chairman, that it would be impossible to list them here. Suffice to say he has spent an average of two months out of his office each year from 1941 to 1948, on dental association work or representing the dental association in community, state and national lay organization health work.

Doctor Kulstad is a member of Delta Sigma Delta, Omicron Kappa Upsilon and the American Public Health Association, as well as a Fellow of the International College of Dentists and the A.P.H.A., and was recently certified as a diplomate of the American Board of Pedodontics.

EARL L. LAMPSHIRE
Vice-President
708 Sharp Bldg.
Lincoln 8, Nebraska

Earl Lampshire, Vice-President, was born in Lincoln, Nebraska, June 22, 1922. He received his B.S. and D.D.S. degrees from the University of Nebraska in 1945, and served a year as dentist for the Children's Fund of Michigan. In 1946 he returned to his Alma Mater as Instructor in the Department of Pedodontics, a position which he still enjoys, since he works with that energetic Raf Ireland, who is head of the Department.

Earl has written articles and presented clinics in several States, and is working on his M.S. degree in the field of premedication for children and Class II cavity forms in the primary dentition.

Married to Carol Capek in 1947, Earl is the proud father of Linda Kay, born in 1949.

He is past president of the Nebraska Society of Dentistry for Children, and immediate past secretary-treasurer of the A. S. D. C.

Fraternally speaking, Earl is a member of Xi Psi Phi, and is also active in the affairs of the Kiwanis, Y.M.C.A., Boy Scouts and the Junior Chamber of Commerce.

Avocationally, he enjoys Barbershop Quartet participation, photography and sports of all kinds.

His practice is limited to pedodontics, and he is one of the leaders in this field in his section of the Country.

With his knowledge of the affairs of our Society, gathered during his years as Secretary, Earl will contribute much to its efficient management.

HUGH KEENAN
Secretary-Treasurer
Keenan-English Building
Corning, New York

Hugh A. T. Keenan is a likeable Irishman born in Sault Ste. Marie, Ontario, Canada, May 25, 1905. He is a graduate of the Faculty of Dentistry, University of Toronto, Class of 1928, interned at Eastman Dental Dispensary, and has practiced since 1929 at Corning, New York, where he divides his time between dentistry and his job as Secretary of the American Society of Dentistry for Children, to which office he was elected at our National Meeting last October.

Hugh had a flare for public speaking in his school days, it is said, having won several medals and plaques for his proficiency in that field. His wife and family of four children give him ample occasion to practice his lecture work at home these days however, and he professes to be still capable of swaying his audience at home!

Rotary and dental society activities have kept Hugh busy these past few years—he is now President of the 7th District Dental Society of the State of New York, in addition to his duties with the A. S. D. C.

Your Editor can assure you that the office of Secretary-Treasurer of your Society is in capable, experienced hands, and that, ladies and gentlemen, means a lot to everybody concerned!

Developmental Problems of the Primary and Early Mixed Dentitions

EDWARD A. CHENEY, D.D.S., M.S.*
Lansing, Michigan

Editor's Note:

The accompanying article is the second by Dr. Cheney, presented to our readers. It deals with some of the techniques available for the correction of anterior cross bites and considers some of the basic principles of the treatment.

Dr. Cheney is a graduate of the University of Michigan School of Dentistry and has taught at that school since 1942, in the Department of Orthodontics.

We are sure you will find many points of interest and factual value in this well written presentation.

E.S.

The first section of this article was published in the third quarterly issue of the Journal of Dentistry for Children for 1949. It pointed out the need for the early recognition of developmental problems of the primary and mixed dentitions. It suggested a chain of responsibility enabling the recognition and interception of developmental irregularities of the teeth and jaws and emphasized the need for continued advisement and consultation among and between dentists in order to give the child patient the competent and qualified services now available from the field of dentistry.

In addition, diagnostic aids for the interception of anterior crossbites were suggested, the significance of these irregularities was reviewed, and the value of treatment was pointed out. The need of accurate and sufficient records for the detailed consideration of growing dentofacial structures was discussed and the concept of the guidance of growth as against the correction of malocclusion was presented. Here, the fact that in the primary and early mixed dentitions dentofacial development is far from complete was emphasized. Accordingly, the modification of dental structures during these stages cannot be considered an end in itself. The treatment of anterior crossbites in the primary and early mixed dentition should be kept to a minimum. The guidance of growth is sufficient in the management of these cases. In reiteration we emphasize the concept of management in contrast with the point of view of correction.

The Treatment of Anterior Crossbites

The treatment of anterior crossbites can be carried out in many ways. These will vary in terms of the skill and experience of the individual operator. In any case the appliance should be simple within the limits of simplicity permitted by the individual situation. In addition, they should be sufficiently flexible to fit the changes and adaptation which take place within the dentition during the process of growing. In order to illustrate the above principles, we continue with the presentation of a number of cases which utilize the principle of the inclined plane. The tongue blade is the simplest of these devices. It is particularly useful in correcting crossbite relationships of central and lateral incisors. Under ideal conditions bilateral inlockings may be dealt with by means of the tongue blade. Usually, however, this technique is most effective when applied to crossbites involving only one tooth in either arch.

The application of the tongue blade tech-

*Assistant Professor of Orthodontics, School of Dentistry, University of Michigan.

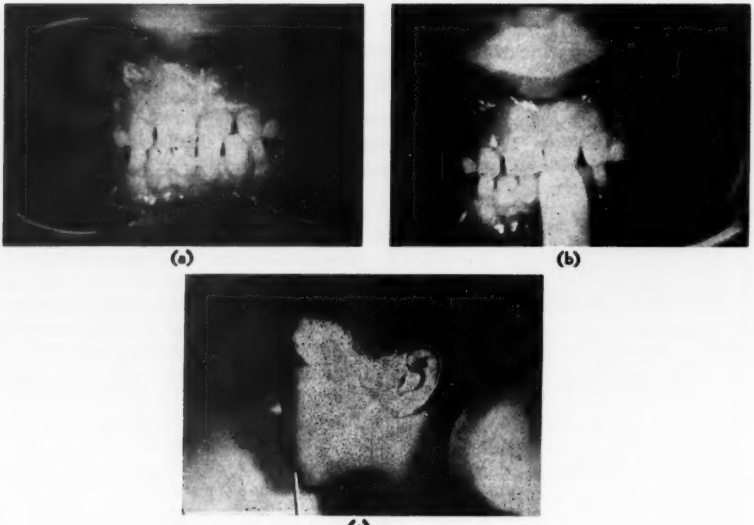


Figure 1—Intra-oral and facial photographs illustrating tongue blade technique.

nique is illustrated in Figures 1a, 1b, and 1c. Figure 1a shows a left central incisor locked lingual to its opponents. All other teeth are fairly well aligned. The patient is instructed to catch only the tip end of the blade under the incisal edge of the tooth. This relationship is shown in figure 1b. Often it is necessary to use narrow blades in order to avoid contact with adjacent teeth. Wide blades may be split in half for this purpose. During exercise the patient is asked to draw the device back hard against his chin, as illustrated in Figure 1c. The tongue blade then provides a steep inclined plane which directs the tooth to the labial. There is little or no intrusive force acting to depress the tooth into its socket. This consideration of intrusion is of particular importance in cases where the overbite is shallow. Here a small amount of intrusive action can reduce the retentive advantage of an overbite relationship of the incisor teeth and contribute to a relapse following the end of treatment.

There are many methods of exercising with the tongue blade in effort to "jump" a lingually locked central or lateral incisor into its correct position. Whatever procedure is used, it is best to be very specific when giving instructions to the patient. One successful set of instructions advises the patient to bite hard upon the plane for five counts, relax for three counts, and to engage in this exercise to the extent of fifty contractions and relaxations of the jaws and musculature before each meal and before retiring.

During the exercise the patient should maintain a continuous biting contact with the tongue blade between periods of contraction. A good way to explain this aspect of treatment is to advise him "never to take his teeth apart." Several advantages are gained by this procedure. First, the mechanical relationship of the blade to the teeth is the same each time the jaws are brought tightly together. Secondly, the physiological change within the supporting bone is localized to the same area with each contraction.

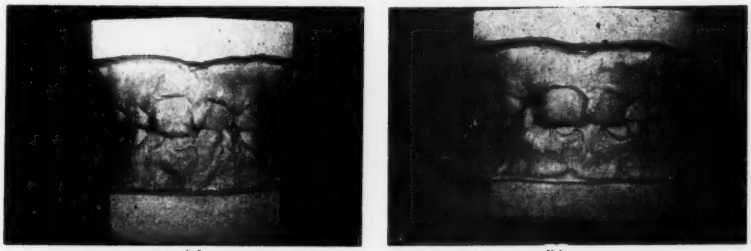
The exercise before each meal is of particular advantage. It enables the mother to supervise the tongue blade activity at regular periods. After a few days of hard exercise, the patient will find that he can bite with the teeth in an edge-to-edge relationship and can usually establish a slight amount of overbite.

(a) (b)

Figure 2—Casts taken before (a) and after (b) the correction of a bilateral incisor crossbite with the tongue blade technic.

At this stage of treatment the mastication of food with the teeth in their correct relationship is of great help. It provides an acceptable reason for continuing the exercise and sets up the first stage of the retentive phase of treatment. Once the patient can attain an overbite relationship he should realize that the responsibility of retaining this change is entirely his. This fact must be thoroughly emphasized at the beginning of treatment. In most cases a conscious effort on the part of the patient to maintain the correction will bring the treatment to a successful end in a surprisingly short period of time.

There are other facts pertinent to the success of treatment which should be presented to the patient during the initial visit. One of these considerations relates to the question of whether or not this procedure is possible. Children are often skeptical of the value of the tongue blade to straighten their teeth. For this reason it is advisable to absolutely convince the patient of the value of the technique. First, of course, the operator must believe in it himself. A shred of doubt in his voice is magnified many times in the imagination of a child. The best way in any case is to present the facts. A series of six or eight sets of casts made of other children and set up before the eyes of the patient provides conclusive evidence that "jumping the tooth" can be done and presents the problem directly to the child. Several illustrations which demonstrate this type of presentation are shown in Figures 2, 3, and 4. Figure 2 shows the before (a) and after (b) treatment records of a patient who jumped both central incisors by using a tongue blade against both teeth for twelve days. Figure 3 demonstrates a change in the relationship of a central incisor after ten days of exercise. As shown in Figure 3a, the maxillary incisor is slightly crowded and lingually posed to the adjacent lateral and central incisors. In figure 3b, after correction, the incisor has adequate space for good alignment. The fact that this correction has been successfully manipulated is important in the consideration of treating lingually locked incisors which are slightly crowded. A close examination of the anatomy of a central incisor will show that the mesio-distal width of the lingual one-half of the crown is



(a) (b)

Figure 3—Casts taken before (a) and after (b) the correction of a lingually locked left central incisor with the tongue blade technique.

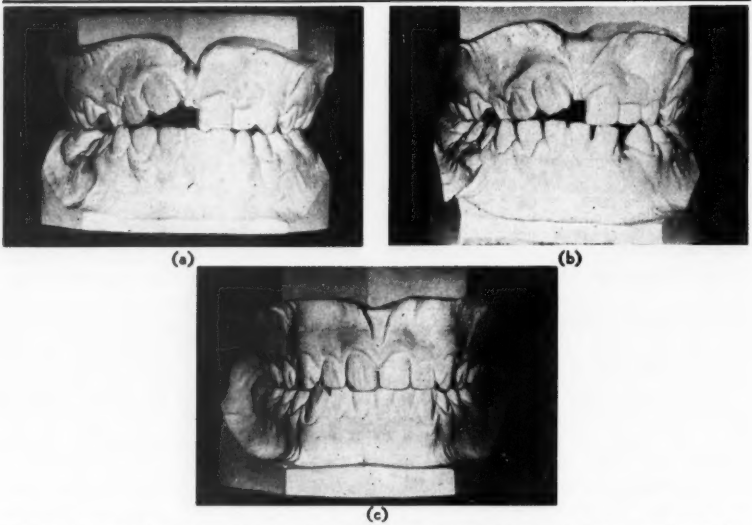


Figure 4—Casts taken before (a) after (b) and three years later (c) of a dentition complicated by supernumerary teeth. Only tongue blade and observational procedures were used following the removal of supernumeraries.

narrower than the labial one-half of the same crown. For this reason an incisor which appears to be slightly crowded while in crossbite relationship (as the one in Figure 3a) will almost always have adequate space for the lingual one-half of the crown when placed in proper alignment. In Figure 3a the mucosa at the cervical of the mandibular incisor opposing the central in crossbite is already resorbing as a result of the trauma incident to the incisor inlocking. Changes of this type are not uncommon and provide additional reason for the early correction of this type of developmental irregularity.

The casts shown in Figure 4a, 4b, and 4c illustrate how a patient can maintain a very slight amount of overbite with a conscious effort. The growth of this dentition had been upset by the presence of supernumerary incisors. Figure 4a illustrates the occlusion following the removal of the supernumerary teeth. As shown, there were various discrepancies in the position of the incisor teeth. A considerable amount of speculation was given as to the best course of treatment. In the final analysis it was decided to adhere to the concept of guiding growth and to resort to a minimum in treatment procedures. The tongue blade technique was taught to the patient. He returned in ten days with the inlocked left central incisor in the position illustrated by Figure 4b. Only a slight amount of overbite had been obtained. However, by constant effort the tooth was maintained in this position and the relationship soon became a stable one. A cast taken three years later is shown in Figure 4c. Here all incisors and cuspids have erupted into good alignment. The incisor overbite has increased but slightly and has become fixed in position. Only the tongue blade and observational procedures were used in this case.

A consideration of patient cooperation is of major importance in the use of the simpler preventive and palliative appliances. Like the tongue blade many of these devices are not fixed in nature. Accordingly, the success with the use of them is greatly dependent upon the patient's willingness to work as directed. It is up to the dentist, then, to solicit the utmost in cooperation if he is to achieve the desired end in treatment procedures. In most cases, the solicitation of patient cooperation is neither difficult nor time consuming. A majority of children respond graciously once they understand the nature of the problem and the

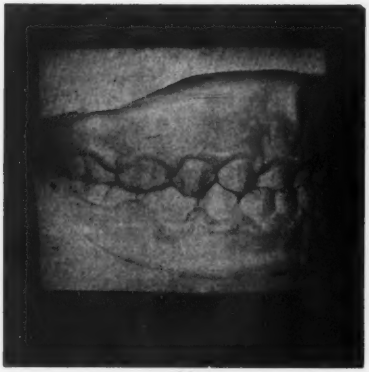
reason for making the correction. Even so, however, the approach to treatment cannot be lackadaisical. You cannot just "toss" the tongue blade or any other appliance at a patient and expect results. Each individual must thoroughly realize the limitations and abilities of the appliance of choice and know exactly what his responsibilty in treatment should be. Failure on the part of the operator to present this information and failure of the patient to understand it lead only to a mutual lack of confidence and add nothing to the luster and prestige of dentistry. On the other hand, the successful use of simple treatment devices calls for an effort which challenges the best in the practitioner to gain full cooperation of the individual patient and demonstrates to the public a real understanding of the interesting biology of dentofacial development.

Another interesting technique is the method of trimming the incisal edges of the anterior primary teeth to create inclined planes. This treatment is best initiated before the incisors loosen for exfoliation. The method is illustrated in Figure 5. Figures 5a and 5b show lateral views of a crossbite relationship of the maxillary primary central incisors and an inlocking of the mesial incisal angles of the lateral incisors in a child four years of age. The steps in diagnosis and treatment are illustrated in Figure 5c. Step A reveals the occlusion as observed at the time of the initial closed bite examination. Step B illustrates the reduction of overbite and a nearly end-to-end relationship of the incisors obtained when the lower jaw is shifted backward to a position of greatest occlusal advantage. This diagnostic aid has been designated as "jaw shift" and was discussed in the first section of this article. Step C illustrates the extent and amount of trimming needed in this case to create inclined planes for use in correcting the crossbite. Once the inclines are developed and the jaws shifted backwards to a position of occlusal advantage, the labial incisal edge of the maxillary plane will contact the lingual incisal edge of the mandibular plane. This relationship is illustrated by Step D of Figure 5c. In any case, the creation of the inclines must be extensive enough to facilitate the relationship demonstrated here. With the assistance of the mother, the patient was directed in exercise exactly as described with the tongue blade technique. Figures 5d and 5e show casts taken four weeks after the beginning of treatment. The mandibular incisors have tipped slightly to the lingual and the maxillary incisors have moved to the labial. As illustrated in Step E, of Figure 5c, the degree of overbite is adequate to be stable in the primary dentition.

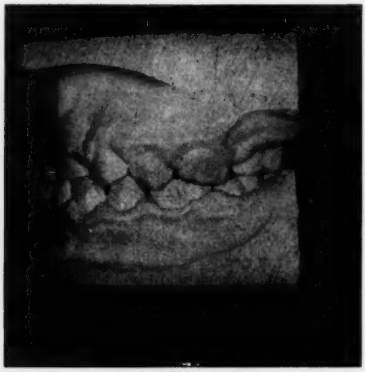
When introducing the inclined plane treatment methods, it is best to anticipate possible tissue reactions from the patient's point of view. Some children have little or no discomfort during the correction of a crossbite. In most individuals, however, the teeth "get sore," and there is some question about going ahead. Some of these people fear that the exercises are hurting their teeth. Others don't like the pain. Accordingly, it is well to prepare the child for discomfort and to advise that the teeth will not be damaged. One approach to this situation may actually aid in the treatment. The patient can be advised that the discomfort will be at its height when the teeth have reached an end-to-end relationship and will go away as the upper tooth or teeth begin to slide down in front of the lowers. This approach and other similar suggestive explanations serve to help the child to understand his discomfort. They also give him a gauge with which to measure the course of treatment.

Several other types of removable appliances are also available as aids in correcting single and/or bilateral anterior crossbites. They may be used for both the primary and permanent dentitions. Some types of crossbites are not as easily managed as those previously discussed, and a more specific type of treatment is needed. In addition, in the permanent dentition, it is inadvisable to resort to trimming techniques, and mechano-therapy offers the only way out.

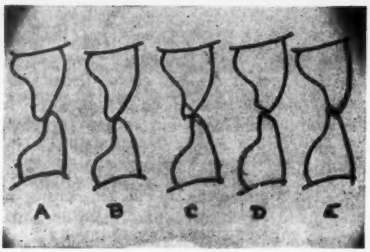
A mandibular incline splint made of acrylic and orthodontic wire is often useful for correcting anterior crossbites. It is very useful when more definite treatment procedures are required. An example of this appliance is shown in Figures 6c and 6d. Figures 6a and 6b illustrate the irregularity which was corrected with it. The appliance itself is a



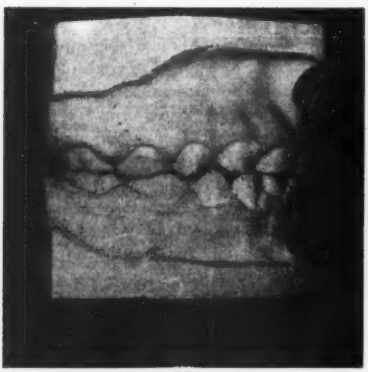
(a)



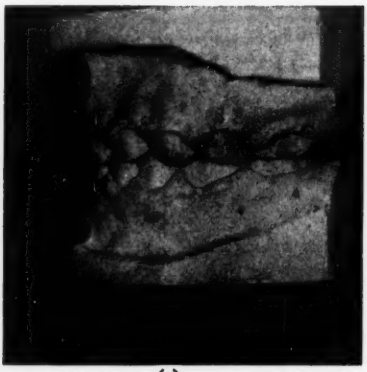
(b)



(c)

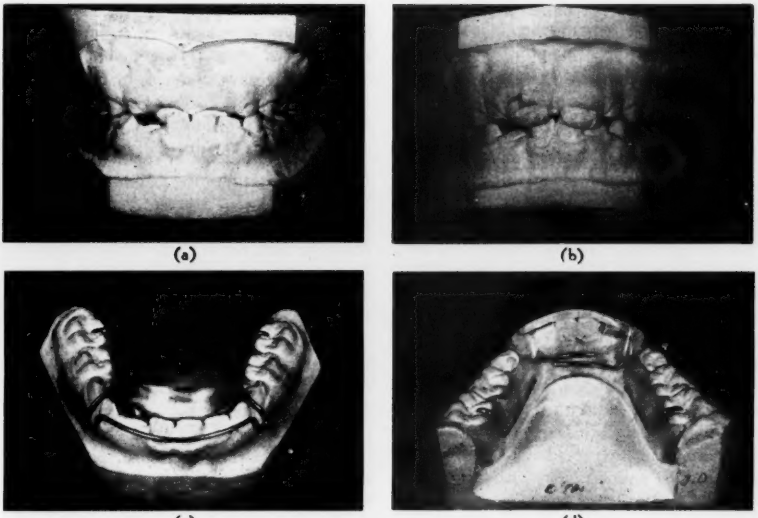


(d)



(e)

Figure 5—Casts (a) and (b) show right and left lateral views of a deciduous bilateral anterior crossbite. Figure (c) is a diagramatic scheme illustrating the treatment procedure. Casts (d) and (e) show right and left lateral views taken four weeks after treatment.



(a) (b) (c) (d)

Figure 6—Casts taken before (a) and after (b) the correction of a bilateral anterior crossbite in the early permanent dentition. Figures (c) and (d) show the appliance used.

modification of the Hawley retaining device. As such, it has been used for many years. It is constructed on a hard stone model made from an accurate impression taken with one if the elastic impression materials. Round orthodontic wire is incorporated into the acrylic body. The wire gives the appliance stability and provides an active agent for the movement of teeth. As shown in Figure 6d the posterior lingual flanges are kept from impinging on the floor of the mouth by occlusal rests which fit into the lingual grooves of the mandibular first molars. The incline portion of the appliance is supported by a labial wire which is adapted in a smooth arc parallel to the incisal edges of the mandibular incisors (Figure 6c). It contacts the labial aspect of these teeth just above the free margin of the gum tissue. At either end of the labial wire and opposite the cuspids are adjustment loops. The adjustment loop enables modification of the labial wire as needed during treatment procedures. Often, as in this case, it is desirable and necessary to retrude the mandibular incisors. The change is facilitated by trimming away the acrylic lingual to the incisors and by increasing the pressure of the labial wire against the labial surfaces of these teeth. This pressure is created by closing the adjustment loops as needed. A piece of dental floss drawn through the contacts between the teeth and the labial wire tests the amount of pressure brought to bear. Adequate stress permits the floss to "snap" freely through the contact points. The pressure will vary from tooth to tooth depending on the relative position of the teeth to the wire.

As illustrated in Figures 6c and 6d, the distal end of the adjustment loop passes over the occlusal plane, distal to the cuspid, and is incorporated in the acrylic over the mucosa lingual to the incisors. Although not shown here, clasps are often soldered to and extend distally from the distal side of the adjustment loop. They clasp the cervical bulge of the buccal aspect of the first primary molars. If the first bicuspid has erupted early, the clasp can engage this tooth. Sometimes the amount of retention gained by the use of a clasp may seem insignificant. In most cases, however, it serves to stabilize the antero-posterior move-

ment of the appliance during function. This is particularly important when it is necessary to trim away a great deal of the acrylic lingual to the mandibular incisors in order to move them to the lingual.

The incline portion of the appliance must be made with attention to function. Before processing, the incline should be shaped and smoothed to an exact contour. This contour is shaped to a smooth convexity (Figure 6c) and has an incline ranging from 15° to 30°. It is designated to fit the arc of the maxillary incisors and extends over the mandibular incisal edges to the labial incisal angles of all teeth involved. By means of this extension, the maxillary incisors can move labially and down over the mandibular incisors without striking end to end with them. The acrylic incline must be processed to a hard consistency in order to avoid indentation and grooving by the maxillary incisors during exercise and mastication. Except for the lower borders of the lingual flanges, the tissue surfaces should never be trimmed during finishing and polishing. Part of the retention and stability of the appliance comes from accurate acrylic adaptation to tooth and soft tissue surfaces. A reduction of this adaptation destroys the ability of the appliance immeasurably.

When accurately used, the lower Hawley incline modifies the dentition in three ways. First, the presence of the incline forces the mandible to shift backward and brings the incisors to the end to end relationship as observed during the diagnostic examination. Secondly, the maxillary incisors strike against the incline and arc directly to the labial. Thirdly, by trimming away the acrylic lingual to the mandibular incisors and by bringing pressure to bear against them with the labial wire, these teeth can be directed to the lingual. This combination of changes corrects an anterior crossbite in a reasonably short time.

There are, however, several aspects of treatment which cannot be overlooked. Once the appliance is placed, it must be worn continuously at all times. This is particularly necessary during meals. The jumping of the bite is greatly facilitated by the force of the teeth against the face of the incline. When the appliance is not in the mouth, the patient will invariably masticate in the old inlocked relationship. This practice offsets any advantage gained at other times.

Another consideration centers around the lingual movement of the mandibular incisors. In some cases the "jaw shift" and maxillary incisor movement are adequate to enable complete correction. In others, however, lingual movement of the lower incisors must be obtained in addition to the above to make the change. In these cases it is important to initiate lower incisor retrusion at the start of treatment. A No. 558 crosscut fissure bur removes the acrylic lingual to these teeth, as desired. Only those portions directly lingual to the crown are ground away. The appliance is most stable when only small portions are removed at one time. Adjustments can be made every week to ten days.

The need for immediate modification of all possible structures when unlocking a crossbite with a Hawley incline is necessitated by the rapid eruption of the posterior teeth. When the mandible shifts backwards and opens to permit the upper incisors to strike against the incline, the molars are apart. Since the appliance is worn continuously, these teeth begin to erupt. In the primary and early mixed dentitions, this eruption is fairly rapid. If the posterior teeth come into occlusion before correction of the anterior crossbite is complete, an end-to-end incisor relationship will have been created. Usually this relationship will relapse to the former inlocking and a re-appraisal of the case can be made. In some situations, however, failure to make the correction is an indication of mandibular overdevelopment. In borderline cases the diagnosis of these relationships is difficult and treatment cannot always be prognosed to the exact degree. On the other hand, when the diagnosis is correct and the treatment is efficient, the unlocking of an incisor crossbite in the primary and early mixed dentitions can be completed in one to six weeks. The correction shown in Figure

6b was completed in one week. Usually, because of the advantage which may be gained in the growing dentition, the treatment of anterior crossbites should be attempted whenever success seems reasonably possible.

Occasionally the response to treatment with the Hawley incline is slower than expected. Some individuals do not masticate as rigorously as others and additional stimulation is needed. In these cases exercises similar to those used with the tongue blade are advisable. In addition, the alternate contracting and relaxing of the musculature with the teeth in occlusion helps to set up a new habit pattern which aids considerably in the retentive stage of treatment. When the treatment is rapid, the "jaw-shift" presents a new relationship foreign to the patient's experience. Often it takes a conscious effort for a few days to maintain the correction. With small children this effort is sometimes difficult to obtain. For this reason it is advisable to modify the appliance to a retaining device after the "jump" has been completed. The removal of the entire incline portion of the Hawley down to the level of the cinguli of the mandibular incisors is sufficient to make this change. The labial wire of the appliance can then be used to maintain the lower incisors in their correct position. Without retention it takes only a small amount of movement on the part of these teeth to set up a relapse.

Many other types of appliances are available for the correction of anterior crossbites. Several plastic and metal inclines cemented to the teeth have been presented in the literature. Various rubber exercising devices have been used successfully. There are, of course, all kinds of fixed combinations of labial and lingual wires available for use. In the more extreme cases these appliances are required for successful correction. In any case, however, success in treatment depends upon a thorough application of the diagnostic principles which dictate the probabilities for treatment procedures.

NOTICE

March 6, 1950

The following resolution was passed by the American Board of Pedodontics during a meeting of the Board in Ann Arbor, Michigan, February 2, 3, 4, 1950:

> "That the American Board of Pedodontics does not recognize training by a preceptor in a private office and such training will not satisfy the educational requirements listed under II-A of the Board's Requirements for Certification."

The American Board of Pedodontics will hold their next examination at Washington University, School of Dentistry, St. Louis, Missouri, on February 8, 9, 10, 1951.

RALPH L. IRELAND, *Secretary*

American Board of Pedodontics

Editor's Note:

It has been requested that we publish the minutes of the 1948-49 meeting at San Francisco. They appear herewith and we trust you will read them in order to apprise yourself of the official acts of your officers and delegates.

A.E.S.

EIGHTEENTH ANNUAL MEETING

The American Society of Dentistry for Children

Physicians and Surgeons College of Dentistry
San Francisco, California

October 15, 1949 – 10:00 A.M.

Executive Council and Delegates
from State Units

President-Elect Taub, presiding

(Article IV, Sec. 5, A.S.D.C. Constitution)

Executive Council members present: W. James Taub, Al Seyler, Hugo M. Kulstad, Earl L. Lampshire, R. M. Erwin, Jr., and Harold Addelston.

Delegates present: Clarence I. Coleman, Laurence S. McClaskey, Hugh Keenan, Jos. W. Martin, Willard S. Bell, Lee E. Blackwood, Camelia M. Thompson, Jess Hayden, Jr., Taylor Dykes, Francis W. Summers, Harold W. Barnes, Laren W. Teutsch, Rex R. Waggoner, E. T. Blair, C. J. Mehlum.

Total present: 21.

1. The meeting was called to order by Dr. Bill Taub at 10:15 a.m.
2. Dr. Taub opened the meeting by reading Article 4, Section 5, from the constitution.
3. Dr. Taub introduced President Dr. Alfred Seyler who welcomed the delegates.
4. Dr. R. M. Erwin, Jr., Past President, was introduced to the delegates.
5. The Minutes of all 1948-1949 meetings were read by the Secretary.
6. President-Elect Taub opened the discussion on the motion which was not passed at last year's delegate meeting regarding a committee which was to be sent to the American Council of Dental Education. A discussion followed and Dr. Mott Erwin attempted to make a clarification.
7. Dr. Hugh Keenan made a motion to the effect that the subject of charter and founder members for certification by the American Board of Pedodontics be aired and reviewed before the Executive Council. Dr. Joe Martin seconded the motion. The motion was carried.
8. President-Elect Taub opened the meeting to a general discussion of criticisms and suggestions.
9. President Al Seyler read letters pertaining to the publication of a new Journal of Dentistry, namely from the Owl Printing Company and Grune and Stratton, Publishers. Following the reading of these letters, Dr. Seyler asked if the group felt there was sufficient good scientific material to fill a 96-page bi-monthly dental journal, that is, six copies per year. A discussion followed, during which each person in the room presented an opinion or suggestion.
10. Dr. Erwin moved that the expressions that have been heard around this table, relative to maintenance of this Journal as it is at the present time, with consideration to expanding it in size at a feasible date, be passed along to the Executive Council of the American Society of Dentistry for Children. Dr. C. M. Thompson seconded the motion and it was carried.
11. A rising vote of thanks was extended to Dr. Al Seyler, our editor.
12. Meeting adjourned one hour for lunch.
13. Dr. Kulstad presented the matter of New Zealand type dental nurses in the United States, and gave a brief explanation of their history, use, and problems. Following a lengthy discussion. Dr. Kulstad moved that the delegates urge that the Executive Council of this organization go on record opposing the training and use of the New Zealand type dental nurse in the United States and its possessions, until such plan has been thoroughly investigated by competant authorities from this country, and evidence presented that use of this type of ancillary aid would improve the dental health of the American people. Dr. Sommers seconded the motion. It was unanimously passed.
14. Dr. Dykes moved that the delegates' request of the Executive Council that they should inform each state unit that the unit should cooperate with state, and local dental societies, state divisions of dental health and state departments of Public Health, in arranging programs for Children's Dental Health Day, and in publicizing the same. Dr. McClaskey seconded the motion. The motion was carried.
15. Dr. Kulstad suggested that we have a quantity of some type of a neat, little, certificate framed to be presented to those clinicians appearing on our national program each year. Those receiving them this year shall be:
    Dr. Alfred E. Seyler Dr. George W. Hahn
    Dr. Herman Becks Dr. Crawford Best
    Dr. Michael Walsh Dr. Kenneth McKinnon
    Dr. George H. Schade Dr. Charles Sweet
    It was verbally approved by all present. Dr. Taub instructed the Secretary to carry this out as soon as possible.
16. Dr. Blackwood made a motion to adjourn. Dr. Lampshire seconded the motion. Motion passed.

EIGHTEENTH ANNUAL MEETING

The American Society of Dentistry for Children

Physicians and Surgeons College of Dentistry
San Francisco, California

October 15, 1949 – 2:00 P.M.

President Alfred E. Seyler, presiding

Executive Council members present: Alfred E. Seyler, R. Mott Erwin, Jr., W. J. Taub, Earl L. Lampshire, Hugo M. Kulstad, Harold K. Addelston.

Non-council members present: Frank Lamons, David Ast, Harry Strusser, Elsie C. Schildwachter, Laren Teutsch, Rex R. Waggoner, Francis W. Summers, C. J. Mehlum, W. W. Demeritt, Cornelia M. Thompson, Henry C. Gage, Walter T. McFall, Henry M. Wilbur, Corvin F. Stine, Lee E. Blackwood, Ralph L. Ireland, Hugh Keenan, John C. Brauer, Muriel K. G. Robinson, Charles A. Sweet.

1. The meeting was called to order by President Seyler, at 2:15.
2. Secretary-Treasurer Lampshire read the minutes of the 1948 Executive Council meeting and general business session. Dr. Seyler stated that since minutes of all 1948 meetings were read, they would not be read at the general business session, unless specifically requested.
   Dr. Lamons stated that the minutes should correct Mrs. Lemuel Hill's name to read Mrs. Delos L. Hill.
   Dr. Kulstad moved that the minutes be accepted as corrected and placed on file. Dr. Addelston seconded the motion. Motion carried.
3. Dr. Seyler turned the gavel over to President-Elect Taub. Dr. Taub called for the President's report.
4. Dr. Seyler presented the President's report. Dr. Erwin moved that we accept the President's report and that the President appoint a committee to act on the recommendations. This committee is to report back to the General Business Session. Seconded by Dr. Kulstad, and the motion carried.
5. Dr. Seyler read the Editor's report. Dr. Erwin moved that the Editor's report be accepted and filed. It was seconded by Dr. Kulstad and carried.
6. Dr. Taub turned the gavel back to President Seyler.
7. Dr. Lampshire read the Secretary-Treasurer's report. Following a short discussion, Dr. Erwin moved that we accept the report of the Secretary-Treasurer and that a committee be appointed to review it and act upon the recommendations. It was seconded by Addelston and the motion was carried.
8. Dr. Seyler appointed Dr. Erwin, Dr. Kulstad, and Dr. Addelston as a committee to review and act upon the recommendations of the President's and Secretary-Treasurer's reports, and report back to the General Business Session tomorrow afternoon.
9. Dr. Ireland presented a report on the activities of the American Board of Pedodontics, and also a report of their treasury.
   Dr. Erwin moved that the report be accepted and placed on file. It was seconded by Dr. Kulstad and unanimously passed.
10. During Dr. McClaskey's absence, Dr. Kulstad presented the report for the Local Arrangements Committee. He stated that the College of Physicians and Surgeons had been made available by Dr. Sloman and Dr. Sweet, with no expense to the organization, that luncheon and dinner arrangements had been made by Dr. McClaskey, not without some difficulty, as the hotel had wanted a written guarantee of the number of reservations in as much as it was 200 plates at $3.50 a plate.
11. Dr. Kulstad read a report of the Program Committee, and of the Public Relations and Publicity Committee. He stated also that he had received a letter from Dr. Wisan just a short time ago, stating that he (Dr. Wisan) had fallen down on the assignment of the pamphlet that he himself had suggested!
12. Dr. Addelston read the report of the Professional Relations Committee. A lengthy discussion followed concerning the function of the committee, and it was then placed on file as accepted.
13. The report of the Schools and Dental Boards Committee as was submitted by Dr. Kenneth A. Easlick, Chairman, was read by Dr. Lampshire. The report was accepted as read and placed on file. It was noted that it would be published in the Journal of the A.S.D.C. in a future issue.
14. Dr. Taub read the Membership and State Units Committee report. Following lengthy discussion, the report was accepted and filed.

NEW BUSINESS

15. Following a short talk by Dr. Ireland, Dr. Addelston made a motion that we pass a resolution to the effect that the A.S.D.C. looks with disfavor and displeasure upon the suggested concept of substandard educational training for the adequate dental care for children. Dr. Erwin seconded the motion and it was unanimously passed.
16. Other recommendations from the morning delegates' meeting were read. They were as follows:
    A. "The impressions that have been heard in this meeting relative to the maintenance of the Journal as it now exists, with consideration being given to expanding it in size at a feasable date, be passed along to the Executive Council." Dr. Kulstad moved that the Executive Council abide by the delegates' recommendation on the proposed journal changes or improvements. Dr. Erwin seconded the motion, and it passed unanimously.
    B. "The subject of charter and founder members for certification by the American Board of Pedodontics be aired and reviewed before the Executive Council."
    Drs. Kulstad and Sweet gave explanations and answered questions regarding the American Board of Pedodontics. Following the discussion, Dr. Seyler asked if anyone cared to make a motion to carry out any future action on this subject. Since no motion was forthcoming, Dr. Seyler stated that the chair considered that the

subject had been thoroughly and completely aired to the satisfaction of any disputants in the case and considered the matter closed as a matter of official business.

C. "There should be some resolution made to strengthen the position of Children's Dental Health Day by helping the state units to the extent that they will cooperate with State and Local Dental Societies. State Divisions of Dental Health and State Departments of Public Health, in arranging programs for Children's Dental Health Day and publicizing the same."
Dr. Seyler stated that the President would direct this resolution to the Community Dental Programs Committee for appropriate action.

17. Dr. Addelston moved that Dr. Kulstad be elected to select and order the certificates for the A.S.D.C. to present to participants at its annual meetings. The motion also stated that Dr. Kulstad is to prepare this properly worded certificate, have a cut made, and have at least one hundred printed. Dr. Taub seconded the motion, and it was unanimously passed.
18. Dr. Seyler directed the Secretary to inform Dr. Kulstad of his obligation and to set a time limit of at least six months on the accomplishment of his task. He also directed the Secretary to address a letter to those persons appearing on this year's program, informing them that recognition will be forthcoming as soon as they are prepared.
19. Dr. Joe Hartsook was nominated by Dr. Erwin for a period of service of three years on the Editorial Board of the A.S.D.C. Dr. Lampshire seconded the nomination. Since there was no other nominations, Dr. Seyler instructed the secretary to cast a unanimous ballot for Dr. Hartsook. The secretary is to inform him of the election.
20. Dr. Sweet explained about a booklet on dental caries he has written, and offered the A.S.D.C. the opportunity to publish it as one of its activities. He felt that the A.S.D.C. would get their money back. Dr. Seyler asked Dr. Sweet if he would permit us to have enough copies to reach all executive council members. He felt we should obtain opinions of the committees established for this purpose. Dr. Sweet stated that he would.
21. Dr. Addelston moved that a resolution he entered in the records directing to Dr. Charles Sweet a vote of thanks for his offer to the Society. It was seconded by Dr. Erwin and unanimously passed.
22. The meeting was adjourned at 5:30 p.m.

EIGHTEENTH ANNUAL MEETING
The American Society of Dentistry for Children

Physicians and Surgeons College of Dentistry
San Francisco, California

October 16, 1949

President Alfred E. Seyler, presiding

Executive Council members present: Harold Addelston, Earl Lampshire, Alfred Seyler, Bill Taub, Mott Erwin, and Hugo Kulstad.

Delegates present: John Klein, Laren Teutsch, Earl Lampshire, Henry Wilbur, Harold Flickinger, Mathey Besdine, Willard Bell, Joe Martin, Hugh Keenan, Harold Addelston, Bill Taub, E. W. Newman, Rex Waggoner, Al Seyler, Egil Klinkenbirg, Taylor Dykes, Erwin Beechen, Frank Bowler, Corwin Stein, Mott Erwin, Jess Hayden, Cornelia Thompson, Lee Blackwood, E. T. Blair.

Total present: 25.

1. The meeting was called to order by President Seyler, at 2:00 o'clock. Secretary-Treasurer, Dr. Earl Lampshire, took a roll call of the state unit delegates. Since the minutes of last year's meeting had been read at a previous delegate meeting, they were not presented at this time.
2. Dr. Seyler gave a report on the committee to honor Dr. Sam Harris and to find proper housing for the history for the American Society of Dentistry for Children. It was recommended by this committee that the history of the American Society of Dentistry for Children should be lodged in the library of the University of Detroit, college of Dentistry, Detroit, Michigan.
   It was further recommended that Dr. Sam Harris should be awarded an honorary life membership in the American Society of Dentistry for Children at the 1952 Annual Meeting. Its acceptance was moved by Dr. Laren Teutsch and seconded by Dr. E. T. Blair and unanimously passed.
3. Dr. Erwin read a report from the nominating committee. The report is as follows:
   W. James Taub, President
   Hugo Kulstad, President elect
   Earl L. Lampshire, Vice President
   Hugh Keenan, Secretary Treasurer
   Alfred Seyler for Councilman
   George Teuscher, Councilman
   Henry Wilbur, Councilman
   Francis Summers, Councilman
   (These four councilmen are to serve terms of two years.)
   It was moved by Dr. Willard Bell and seconded by Dr. Joe Martin that we accept the report of the nominating committee and instruct the secretary to cast a unanimous ballot of the society. Unanimously passed. The secretary cast the unanimous ballot as directed.
4. Dr. Erwin presented and nominated the following men to be added to the following committees or commissions.
   Membership and State Units Committee—Hugo Kulstad
   Public Relations and Publicity Committee—George Teuscher
   Professional Relations Committee — Frank Lamons
   Schools and Dental Boards Committee — William Demeritt
   Community Dental Programs Committee—David Ast
   Dr. Seyler stated that it is the duty and pleasure of the incoming president to appoint the chairmen of these committees.
5. Under new business, Dr. Seyler read the names of eligible persons who might be nominated

for the American Board of Pedodontics. Five names were placed in nomination. They are:

Ralph Ireland — George Teuscher
Alfred E. Seyler — Walter McBride
Elsie Schildwachter

These nominees were approved by the executive council members present.

6. Dr. Erwin read a report of the committee on the recommendations for the president's report. The recommendation by the president that some attention be given to section 3 of article 4 with a revision to prevent the possibility of any one unit controlling the affairs of the society, not be done at this time. Dr. Ruth Martin moved we accept the report of this committee and Dr. Harold Addelston seconded. It was unanimously passed.

7. Dr. Erwin reported for the committee who was to report on the recommendations from the secretary-treasurer's report. The following are the recommendations in regard to the secretary's report.

   1. Dr. Henry Wilbur moved that a committee be appointed by the incoming president to determine possibilities of storing the archives of the American Society of Dentistry for Children in the archives of the American Dental Association. Seconded by Dr. Erwin and unanimously passed.

   2. The recommendation regarding the publication of a manual for officers was tabled for consideration by the executive council during the next year.

   3. It was recommended that the constitution should be printed in the Journal of Dentistry for Children as soon as is convenient and reprints should be made at this time for future distribution.

   4. The recommendation that state units be requested to accept and abide by the constitution of the A.S.D.C. as closely as possible was opposed. The committee stated that they felt that this was implied in the wording of the constitution.

   5. It was the consensus of opinion that the secretary-treasurer of the A.S.D.C. should convey a suggestion to unit presidents that the officers of the unit should correspond with the officers of the American Society of Dentistry for Children and that the office of secretary-treasurer should be combined.

   6. Committee report was discussed, and the following motion was made. It was moved by Dr. Flickinger, seconded by Dr. Addelston that we have a plate for honorary life membership engraved so that certificates may be printed. The cost of engraving is to not exceed $100. Motion carried. The president is to appoint a committee to care for this.

   7. The committee recommends that in the future, graduating seniors shall receive their certificate of merit and the other accompanying awards for the remainder of the year in which it was presented and all of the following year.

   8. The committee opposes the recommendation that the past presidents shall be invited as dinner guests of the society in future years. It was moved by Thompson and seconded by Dr. Wilbur that the report of the committee be accepted. Unanimously passed.

8. It was moved by Dr. Addelston and seconded by Dr. Waggoner that the American Society of Dentistry for Children direct the officers of all state units to discontinue, for the present, the use of certificates of membership. Unanimously passed.

9. It was moved by Dr. Waggoner and seconded by Dr. Wilbur that any contemplated deviation from national procedure or policy by a state unit be referred to the American Society of Dentistry for Children, Executive Council for advice and disposition, unanimously carried.

10. Dr. Klickinger moved that we send a properly worded resolution to the American Dental Association to the effect that we oppose Compulsory Health Insurance. The motion died for lack of a second.

11. It was moved by Dr. Erwin and seconded by Dr. Addelston that the secretary be instructed to write to state units inviting them to instruct us as to their wish in regards to the making of a resolution opposing compulsory health insurance.

12. Dr. Wilbur reported on the progress of the work of his committee to formulate a resolution regarding the training and use of auxiliary personnel in the performance of operative dental procedures for children. He stated that this resolution would be sent to the secretary upon its completion.

13. It was moved by Dr. Newman and seconded by Dr. Flickinger that a check for $25 be sent to Dr. Sloman, Dean of the Physicians and Surgeons School of Dentistry in appreciation of the use of the facilities of the school. Unanimously passed.

14. Dr. Beechen moved and Dr. Hayden seconded that the practice of this organization in issuing a certificate of merit to senior dental students be discontinued. The motion was not carried.

15. Dr. Seyler complimented the newly formed Washington unit upon their excellent work and presented their charter to Dr. Bowler, their representative.

16. President Seyler installed the newly elected officers and turned over the office of president to the newly elected president, W. James Taub.

17. President Taub stated that nominations were in order for the office of Editor of the Journal. Dr. Erwin nominated Dr. Alfred Seyler to succeed himself as editor. Dr. Lampshire seconded. No further nominations being presented Dr. Seyler was unanimously elected to succeed himself.

18. Dr. Flickinger moved we adjourn and Wilbur seconded. Unanimously passed. Meeting adjourned.

PRESIDENT'S REPORT

October 15, 1949

San Francisco, California.

Members of the Council:

This has not been a year of strenuous activity on the part of your President, although the membership of the Society has increased from approximately 2,000 to approximately 3,000 during my term of office. As you know, it is the president-elect who heads up the membership committee, so Dr. William Taub must receive credit for the increase in membership. I have merely tried to be your representative when the need arose, and to perform the ordinary duties pertaining to the Office of President, including visits to various Units about the country in an effort to tell the members what the parent American Society expected of them, would do *for* them, and whatever information of interest I could give them about dentistry for children. In this regard, appearances before, or meetings with, the following Units or groups were accomplished: Birmingham, Alabama; Syracuse, New York; Lincoln, Nebraska; Omaha, Nebraska; Minneapolis, Minnesota; Atlanta, Georgia, and several Michigan groups. It was one of the highlights of the past year to meet men and women all over the country as their President, and to be accorded a genuine welcome as your representative.

Several important items, all of which have been brought to you in previous reports, bear repetition.

First in importance should be the membership campaign now under way under the auspices of President-elect William Taub. Although the cost of mailing and printing is considerable, the increased membership should warrant the expenditure, and we may expect a comprehensive report from Dr. Taub at this meeting.

The propositions submitted by Grune and Stratton and the Owl Printing Company, our present official printers, should be well discussed. A copy of each of these proposals is attached to this report. For your information, the postcard inserted in the 3rd Quarter issue, requesting an opinion from each member, has produced a response which is almost equally divided in regard to the question of raising the dues to provide a better Journal. I have no formal recommendation to make on this subject.

It is required by our Constitution that a member be elected to the Editorial and Publications Committee, for a three year term. Although the Journal is a project rather close to my heart, I do not care to recommend a specific individual for the position.

Our Constitution was revised last year, and printed in the Journal of the 1st Quarter, 1949. I would recommend that some attention be given to Section 3 of Article IV, with a revision to prevent the possibility of any one Unit controlling the affairs of the Society.

It has been a privilege to serve the American Society of Dentistry as its President this past year, and to work with its officers and Executive Council, whose support and cooperation are hereby gratefully acknowledged. May the Society continue to prosper, to benefit its members, and to bring better dentistry to the children of our time.

Respectfully submitted,

Alfred E. Seyler, President.

GRUNE & STRATTON, Inc.
381 FOURTH AVENUE
NEW YORK 16, N. Y.

April 4, 1949

Dr. Alfred E. Seyler
American Society of Dentistry for Children
14615 East Jefferson Avenue
Detroit 15, Michigan

Dear Dr. Seyler:

I have given thought to the details of the tentative plan for the publication of the Journal of Dentistry for Children. In the meantime the special dental publishing company is being formed and all the directors of Grune & Stratton will serve as directors of this firm. The following is a brief outline of the main points for an agreement between the American Society of Dentistry for Children and the Dental Publishing Company:

1. The Publisher will undertake the publication of the Journal of Dentistry for Children and will assume all expenses in connection with the publication and promotion of the Journal.
2. The Publisher guarantees to publish the Journal in accordance with the highest standards of scientific publishing.
3. All advertising copy will be submitted to the Editor-in-Chief for approval and only approved copy will be accepted for insertion.
4. The Journal will be published as a bi-monthly with an average of 96 pages per issue.
5. The American Society of Dentistry for Children will appoint an Editor-in-Chief, Associate Regional Editors and an Editorial Board who will be responsible for the editorial policy and general conduct of the Journal. The Editor-in-Chief and Associate Editors will be appointed for a period of at least five years.
6. It shall be the duty of the Editor-in-Chief and/or of the Associate Editors (to the extent to which the Editor-in-Chief delegates this responsibility to them) to solicit and receive literature from all sources, pass on its quality, fitness and arrangement for publication, and otherwise fulfill the obligations and responsibilities usual to these offices.
7. The yearly subscription rate for the Journal within the United States will be $6.00. However, the Publisher shall furnish an en block subscription for the Journal for the members of the Society at the subscription rate of $5.00 per year. The said en block subscription shall be paid from the Treasury of the Society to the Publisher.
8. The Publisher agrees to pay to the Society 5% of all income from subscriptions of Society members and 10% from income from all other subscriptions as a contribution of the Society's share of the editorial expense.
9. It is agreed that the costs of illustrations to be paid by the Publisher shall not exceed $150.00 per issue and this sum shall be used at the discretion of the editorial staff.

I hope that this short outline meets with your approval. If not, please do not hesitate to let me know what changes you would suggest. I believe that such an agreement as outlined above is in line with other contracts approved by the College of Dentists.

May I add that the production, editorial and promotion facilities of Grune & Stratton will be available to the Dental Publishing Company.

Thanking you again, I am

J. Holston Hosiosky.

OWL PRINTING CO.
11446 WYOMING AVE. WEbster 3-6660
DETROIT 4, MICHIGAN

Dr. Alfred E. Seyler
14615 E. Jefferson Ave.
Detroit 15, Michigan

Dear Dr. Seyler:

We wish to commend the officers and members of the American Society of Dentistry for Children for the ambitious drive for new members and possible enlargement of the Journal.

Having had the pleasure of producing the Journal for many years, we are naturally enthused over the prospects of a greater scientific medium to reach your members. In view of these facts, we desire to assist such a program by offering a "Bound" Journal, more illustrations and to relieve you of the several steps in the preparation and mailing of the Journal at no additional expense to your organization.

Below, you will find four plans for the improved Journal with relative costs. Please keep in mind that such proposals will preserve the professional dignity of the Journal by publishing it without advertisements unless you so desire.

	Per member per year
40 pages—4 issues per year (Illustration allowance $75.00 per issue)	$2.00
40 pages—6 issues per year (Illustration allowance $75.00 per issue)	$3.00
72 pages—4 issues per year (Illustration allowance $150.00 per issue)	$3.00
72 pages—6 issues per year (Illustration allowance $150.00 per issue)	$4.00

The billing of any of the proposals would be made as now to the American Society of Dentistry for Children at the completion of each issue in accordance with the above prices.

We submit these practical, non-complicated, economical and business-like plans and solicit your approval, changes or additions.

Thank you for your kind consideration.

Very truly yours,
OWL PRINTING COMPANY
Donald G. Blake

EDITOR'S REPORT

October 15, 1949

San Francisco, California
Members of the Council:

A brief report of the progress of the Journal should suffice to advise you your Editor is still on the job, in spite of his concommitant job as President of our Society.

Circulation of the Journal is steadily rising, in step with the increased membership, with figures being as follows for the past Journal year:

4th Quarter 1948, 2,025 copies, 40 pages $0.54 per copy	$1,111.47
1st Quarter 1949, 2,735 copies, 36 pages $0.50 per copy	1,371.88
2nd Quarter 1949, 3,042 copies, 36 pages $0.44 per copy	1,337.43
3rd Quarter 1949, 3,104 copies, 32 pages $0.44 per copy (and reply cards $55.00)	1,373.56

The P. N. Condit Company discontinued its advertising in our Journal with the 1st Quarter 1949 issue, due to a decreased advertising budget, but the Rocky Mountain Metal Products Company contracted for a year's full page advertisement beginning with the 2nd Quarter 1949 issue, so in reality our advertising revenue was slightly higher this year.

Our relations with the Owl Printing Company, our printer, have been amicable and mutually satisfactory, both from the cost and service standpoint, and we trust they will continue so.

Certain improvements in format and type are to be made, beginning with the 4th Quarter 1949 issue, and a better arrangement has been made with the printer in regard to the mechanical detail work previously done by your Editor or his Secretary. There will be no additional charge made to the Journal by the Printer for these additional services.

As a matter for your consideration, your Editor would like to observe that although material for publication may sometimes easily be obtainable, it is not always suitable for publication, either because it may be too technical, too personal or too unscientific and inaccurate. We have published some articles this past year which were open to question as to their merits, but sometimes we do that at the request of an individual of prominence who feels the material should be published, or because the material is provocative, even if not of a scientific nature. In a publication such as ours, the Editor must make choices and be prepared to take the criticism as well as the compliments, and it is the privilege of the Executive Council to terminate his tenure of office if the magazine does not reflect the ideals of the Society and the best thinking in the field of dentistry for children. Our efforts fall short, we admit, but they are sincere and dedicated, we believe, to a better American Society of Dentistry for Children.

We would be remiss if we did not acknowledge with grateful appreciation, the cooperation of our Editorial Board members, Doctors Stanley Brown and C. Ray Taylor; our Executive Council members, our Officers, especially Earl Lampshire and his staff; our Contributing Editors; the various Unit officers and reporters, and especially the understanding and assistance of our overworked amanuensis, Louise.

Thank you all, and may the future bring a better, if not necessarily bigger, Journal of Dentistry for Children.

Respectfully submitted,
Alfred E. Seyler, Editor.

SECRETARY'S REPORT

It has been said that one of the busiest and most interesting offices that anyone can hold in an organization, is that of secretary. This has certainly been my experience during the past two years. The activities of this past year have been many, and interesting. Time will not permit a report of all affairs of your secretaries office during this past year, but I will try to call your attention to some of the more important.

We are always interested in the annual growth of our society. Last year the report was very good, but this year it is even better. The past few years have shown that active state units appear to be the real "backbone" of our growth. Two years ago we had twelve units and a total membership of 1,201. Last year we added two new units, Kentucky and Alabama, and our total membership increased to 1,794. This past year two units, Oregon and Illinois, have been reactivated, and five new units have been organized. These are Washington, Northern California, West Virginia, Rhode Island, and Arkansas. This makes a total of twenty-one state units, and our total membership is now 2,779. In case we might start patting ourselves on the back too soon, it seems fitting to state that this increase in membership has been limited generally to a few state units. Elsewhere there have been many drops. It is these drops that have your secretary worried. They require a great deal of correspondence; they tend to turn the interest of other members, and they are a tremendous burden on our treasury, as they receive at least two issues of the Journal free before they are actually dropped.

Our policy of granting a certificate of merit and second award to outstanding seniors has been very gratifying this year. Most all schools are cooperating in this program. Forty-eight certificates of merit and second awards were granted this year. Each award carries with it a year's membership and subscription to the Journal. A congratulatory letter was sent to each recipient.

Several executive council mail ballots were mailed out this year. One was the motion by Dr. Taub, regarding the proposed membership drive, and all others were regarding state unit petitions. All ballots were unanimously passed.

It is this office's privilege to work and correspond with officers of the American Academy of Pedodontics, and American Board of Pedodontics. I wish to express thanks to the officers of both of these organizations for their excellent cooperation during this past year.

In closing my report last year, I recommended several changes which were felt to be necessary to efficiently carry on the affairs of a society with "Growing Pains." I am happy to report that many of these received favorable action and the changes have been made.

Before closing my report this year, I would like to make some recommendations which should be considered during the next year. The first two carry over from last year's recommendations.

1. A permanent housing for the archives of our society should be found. In the future a considerable amount of money will be spent in shipping the material to each new secretary unless a satisfactory permanent housing site is selected.

2. There seems to be a considerable amount of confusion among newly elected Unit officers, and officers of new units. A great amount of inefficiency could be eliminated if a committee could be appointed to organize and publish an "Officers' Manual for State Units." This same committee might contact past national officers and organize and print a "Manual for ASDC Officers." If in the future most offices are to be held for only one year, this need for a guide will become increasingly important to maintain efficiency. At present an officer only becomes familiar with the scope and responsibilities of his office as he nears the end of his term.

3. The secretary should be authorized to have the constitution and by-laws printed in booklet form.

4. All present and future state units should be requested to accept and abide by the constitution and by-laws of the A.S.D.C. as closely as possible.

5. It has been my observation that by combining the offices of secretary and treasurer of the A.S.D.C., we have saved a great deal of time, lessened confusion, and lowered expenses. I would like to therefore, suggest that we direct all present and future state units to combine their offices of secretary and treasurer.

6. In the future we will have many names submitted for consideration as Honorary members. I would like to recommend that a committee be appointed to have a "certificate for honorary membership" properly worded, printed, and placed in the hands of the secretary for future use.

7. Certificates of Merit are awarded to graduating seniors anywhere from May to September. This means that since we start our year on January 1st, the award recipients, theoretically, receive only two journals. This past year I have taken the liberty of granting these awards for the balance of this year, and all of next year. I recommend that this policy be approved and followed in the future.

8. This year all past presidents of the A.S.D.C. were notified of their eligibility to attend, and participate in these meetings without voting rights. (They were also invited to attend the Sunday evening dinner as guests of our society. I would like to suggest that this policy be followed in future years.)

In closing the Secretary's report, I want to thank the many friends who have made these past two years as secretary of the American Society of Dentistry for Children possible, and for their wonderful help, suggestions, and cooperation.

Respectfully submitted,

Earl L. Lampshire

Secretary-treasurer 1948-49

UNIT NEWS

News intended for this column must be received by the editor before the first day of January, March, June or September to meet the deadline for each of the respective quarterly publications.

MEL NOONAN
Birmingham, Michigan

Michigan

On December 7th the Michigan unit held its annual panel discussion in Ann Arbor. The subject was "Problems Pertinent to the Practice of Pedodontics."

Members of the panel were:

Edward Martinek . . . . . Moderator
George Moore . . . . . Orthodontist
Ernest Watson . . . . . Pediatrician
Alfred E. Seyler . . . . . Pedodontist
Hubert Knoch . . . . . Psychiatrist
Fred Henny . . . . . Oral Pathologist

The questions arising from the audience were most stimulating and the members of the panel did a splendid job of answering.

Northern California

The meeting of the Northern California Chapter of the ASDC which was held on December 7, was an outstanding success.

The announcement was made of the installation of officers for the year 1950. They are:

President . . . . . Irwin Beechen
President-elect . . . . . Kenneth McKinnon
Vice-President . . . . . Charles Sweet, Jr.
Secretary-Treasurer . . . . Lawrence McClaskey
Editor . . . . . Edward Mack

Following the taking of the gavel by Irwin Beechen (only there ain't no gavel), Edwin C. Randol gave an excellent presentation on "Economics and Treatment Planning as Applied to Dentistry for Children."

Comparing the average dental office to a water pipe full of leaks, Ed touched on practical ways of saving money by proper treatment planning and appointment scheduling. He mentioned that absence of laboratory fees in dentistry for children resulted in net savings to the patient and the dentist. He described the advantage of buying supplies at discount by means of a pre-payment plan. He also gave us many practical points pertaining to income tax and the dentist.

In fact as he spoke, many a pad and pencil were busy about the table—and no one was doodling.

Pennsylvania

The Penna unit has increased its membership by 60%. The letters sent to the membership of the P.S.D.S. had wonderful results.

Members of the unit are presenting an educational program for the lay audience of Philadelphia and vicinity on National Children's Dental Health Day.

Chairman of the meeting
Dr. Ernest F. Ritsert
What the Parent Should Expect from the Dentist . . . . . Dr. Raymond Werther
What the Dentist Expects from the Parent . . . . . Dr. Morris Kelner
Crooked Teeth as They Affect the Child's Future . . . Dr. Edw. Ray Strayer
Dental Care for Every Child
Dr. Gertrude Tank
(Presentation augmented by Color Sound Film)
The Dental Problems of the Abnormal Child . . Dr. Charles H. Patton

New Jersey

N.J.S.D.C. held its annual Clinic Day Program at Jersey City on January 11, 1950. The clinics presented covered practically every phase of pedodontics. After dinner Dr. Helmut A. Zander, Professor of Oral Pediatrics, Tufts College, Boston, discussed "Pulp Management of Primary and Young Permanent Teeth," and as one would expect of Helmut he was accepted with great interest.

The officers of the N. J. unit are:

Louis E. Greenwald . . . . . President
Lawrence R. Burdge . . . . . Pres. Elect
Sidney I. Kohn . . . . . Vice President
John K. Hendel . . . . . Secretary Treasurer

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Extra individual teeth, each..... .60

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R762—Lower rubber jaw with 12 removable Ivorine teeth..... 12.00

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Extra individual teeth..... .35 each
F281—3 diameters: Upper and lower full-jaws with fixed teeth, including 6-year molars..... 7.50 per set
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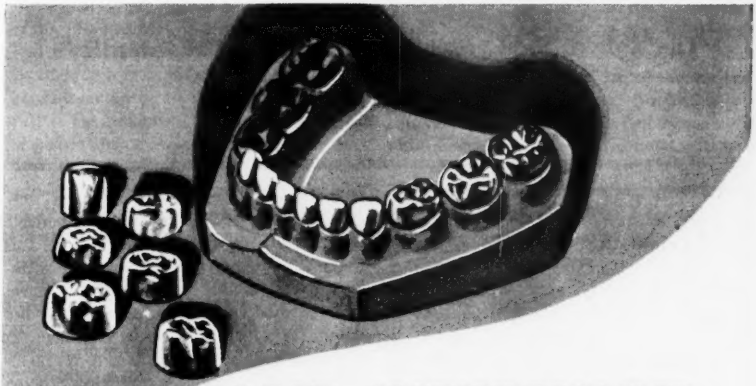

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The Role of the General Practitioner in Orthodontics*

FAUSTIN N. WEBER, D.D.S., M.S., F.A.C.D.
University of Tennessee, College of Dentistry
Memphis, Tennessee

Editor's Note:

Faustin Weber, associate professor and head of the Department of Orthodontics at the University of Tennessee, was born at Toledo, Ohio. His training in dentistry was at the University of Michigan, from whence he graduated in 1934 and received his M.S. in 1936. After a short period of practice in Detroit he accepted the teaching assignment at Memphis, and is still affiliated with that institution.

His accompanying article is interesting and well written, and will certainly be worth your reading.

A.E.S.

Introduction

In recent times criticism emanating from the profession has been leveled at dental educators for their supposed failure to instruct dental students in such a manner as to enable them to perform all types of dental service thoroughly and capably. A major portion of this complaint has arisen with the profession's realization that today's dental graduate is no better prepared to deal with complex orthodontic cases than was the graduate of twelve years ago, in spite of the fact that the course in dentistry has been lengthened one year during the interval. It is contended, therefore, that from the standpoint of orthodontics the public is served no better today than formerly, and circumstantially dental educational methods are found wanting.

Without attempting to refute such criticism, other than to point out that even if every graduate were capable of handling complicated orthodontic treatment procedures, such a type of service as Moore[1] states "very much like bridges and inlays are not available to the mass population of this country," this paper will attempt to show that in most instances the general practitioner has never delivered the orthodontic service that lies within his capabilities to deliver, and that this is so because of his failure to recognize the many indications for practicing prophylactic orthodontics.

Prophylactic Orthodontics

The profession has too long had the notion that orthodontics and "wire bending" are synonymous. As in other branches of dentistry, the most far-reaching service than can be rendered is in the field of prevention, and preventive or prophylactic measures are seldom associated with orthodontic appliances.

Prophylactic orthodontics is defined "as the application or practice of those measures or principles which may be effective in guarding the individual against the development of oral and dentofacial anomalies."[2]

That sufficient emphasis may be placed upon prophylactic orthodontics consider that Brandhorst,[3] from a study of over 100,000 St. Louis school children, has stated that the controllable or preventable factors represent 81 per cent of the causes of dentofacial anomalies. In other words, only 19 per cent of the malocclusion that develops should require the major biomechanical treatment procedures that only the qualified specialist in orthodontics can give. In the light of these figures it would seem apparent that if the profession's orthodontic service to the public is ever to approach a point where it may be comprehensive enough to be adequate, *there must be brought to the realization of the man in general practice the importance of his role in the field of prevention.*

*Read before the Fifth District Dental Society of Tennessee, Nashville, Tenn., September 6, 1949.

I say "the man in general practice" advisedly because the specialist is just as surely barred from the field of prevention as the general practitioner is from the treatment field. The specialist rarely sees the orthodontic case until it has become a treatment indication; the general practitioner frequently is in contact with cases of a developing malocclusion and—if Brandhorst's statistics are reliable—a large percentage of these cases were at one time amenable to some prophylactic measures.

To discuss at length all the possible indications for the practice of prophylactic orthodontics and the therapy to be used would carry this paper to involved lengths, but a consideration of some of the more commonly encountered indications seems worthwhile.

Perverted Sucking Habits

For such a discussion let us begin with some of the habits that are destructive to the development of so-called normal occlusion. Among the perversions of normal functional processes lies a group of habits that are recognized as frequently operative in producing malocclusion. The first and most common of such habits is thumb or finger sucking. In spite of all statements to the contrary appearing in health columns of daily newspapers, in modern magazines, and textbooks on child hygiene, enough irrefutable evidence is at hand to prove that thumb or finger sucking—in many instances, is obstructive of normal growth and development of the dentofacial complex. This is particularly true, as Lewis[4] has shown, if this habit persists beyond the time of eruption of the permanent incisors. Thumb or finger suckers who develop a normal occlusion in spite of such a habit do not disprove the statement that such perversions usually spell trouble in the form of various types of dento-facial anomalies, but merely show that the quality of the supporting alveolar bone of such individuals is so good as to overcome the tendency of the incisor teeth to be displaced, or that the habit has never been practiced vigorously enough or long enough to be effectively destructive.

Therapy

The therapy to be used in the prevention of dentofacial abnormalities that result from such habits should be known by all general practitioners of dentistry. In the case of this habit—as with all other habits—the logical time to break it is at the beginning. That which is a simple problem at the earliest manifestation of the habit correctable by simple means, may become an exceedingly difficult task, amenable only to drastic therapy, after the habit has become firmly entrenched. The general practitioner through his contact with the parents has the opportunity to preach this doctrine of early interception of perverted sucking habits.

The methods used to correct these habits might be classified as being either: 1) mechanical, 2) chemical, or 3) psychological. Numerous mechanical devices are available. Most of these appliances make it difficult or impossible for the sucker to get the thumb or digit up to the mouth by limiting the amount of flexion of the elbow joint. Such simple home measures as the application of adhesive plaster to the thumb or the use of a finger stall have been known to be effective in breaking these habits in their incipient stages.

In stubborn cases, where the homemade or patented type of mechanical device fails to correct perverted sucking habits an intraoral appliances is usually effective. This appliance consists of a lingual archwire supported by bands on the last molar teeth. Soldered to the lingual archwire and covering the anterior palatal area is a latticework of small gauge wire. This lingual filigree is placed several millimeters clear of the palatal gingivae. With such a device in place the thumb sucker finds it impossible to place the palmar surface of the thumb in contact with the gingivae and this prohibition usually takes the satisfaction out of the act.

The use of chemicals to make the fingers distasteful is effective therapy sometimes. Bitter or hot tasting drugs are applicable and several proprietary preparations containing such compounds are on the market designed specifically for use in the correction of such habits.

In our experience, sucking habits of long duration do not respond to this type of therapy. It is effective only when the habit is young.

The psychological approach to these habits—useful only with older child patients—was suggested by Dunlap,[5] in what he termed the Beta Hypothesis. The child is to be called from play or some activity which is especially enjoyable and forced to stand in front of a mirror to watch while being obliged to practice the sucking act. This purposeful repetition of the sucking habit several times daily is designed to make the child consider the act a task rather than a pleasure.

Lip biting, lip sucking, or cheek sucking are habits that may be destructive to the establishment of normal occlusion. If alert, the dentist can discover such habits when oftentimes they are overlooked by the child's parents. Where the characteristic type of malocclusion suggest their presence, these and other habits have been discovered by carefully watching the patient's actions in the chair. Almost invariably at an unguarded moment the destructive act will be performed if the patient is unaware of the dentist's observation. Here again the general practitioner plays his role in prevention by detecting such habits, pointing them out to the parents and informing them of the damage that may result to the dentofacial complex if the habit is not abandoned early enough. With the older child patient the problem of habit eradication is half solved when the act which has become a subconscious one, can be brought to the conscious attention of the individual. The dentist in uncovering the habit can instruct the parent to do this and the patient's help solicited to discontinue the habit.

Operative Dentistry and Preventive Orthodontics

The opportunities to practice prophylactic orthodontics are so omnipresent as to be intimately bound up with the operative procedures the dentist uses on the child patient. Consider the sequelae resulting from an occlusal restoration that is improperly carved or a proximal restoration that fails to restore the lost proximal contact. In the former, the cuspal relationship is disturbed and the occlusal balance impaired or destroyed, necessitating an unfavorable shift of the affected teeth in an effort to find a balancing position to withstand the occlusal forces; in the latter, loss of proximal contacts favors the development of faulty axial relationships and both conditions are etiological factors in the production of malocclusion, through their action of destroying the fine interlocking effect of the cusps—one of the important functions of which is to establish and maintain the proper positioning of the individual teeth and thus assist in the preservation of normal occlusion. Therefore, the general practitioner whose restorations do repair carious or broken down teeth with correct anatomical size and form, is practicing preventive orthodontics along with good operative dentistry. This angle of the preventive program also has an educative aspect because considerable missionary work remains to be done in preaching the value of the primary dentition and converting parents from the heretical doctrine that because these teeth are temporary, they are unimportant.

Ectopic Eruption

Ectopic eruption of first permanent molars may become a cause of malocclusion. Any tooth in the permanent dentition may erupt in an abnormal position, i.e., ectopically. An ectopia commonly found with first permanent molars places them in impacted positions with the mesial portion of their crowns locked cervical to the distal bulge of bell-crowned primary second molars. The permanent molar may be freed from its impacted relation and the ectopy remedied by inserting a 23 gauge brass ligature wire cervical to the point of contact of the primary and permanent molars, looping one end of the ligature over the occlusal embrasure and tightly twisting the free ends of the ligature wire together until a definite mechanical wedge or separating action is produced. The ends of the separating wire are then cut and the remnant tucked in to the buccal embrasure immediately distal to the primary molar. After several weeks the brass wire may be removed and the first permanent molar usually will erupt normally.

The preventive orthodontic aspect of intercepting ectopically erupting first permanent molars, when possible, is apparent if one observes the frequency that these teeth are

the cause of early and excessive resorption of the distal portion of the roots of the second primary molars. Resorption will encourage early exfoliation of the primary molars and in turn create a condition which favors the eruption of first permanent molars in abnormal mesial relations.

Roentgenographic Aids

Dental roentgenograms are an invaluable aid in the detection of oral conditions that— if recognized early enough — give many opportunities to practice preventive orthodontics. Consider, for example, the presence of impacted or unerupted permanent teeth, supernumerary teeth and retained primary teeth. These conditions are recognized as potential causes of malocclusion. Surgical intervention at the proper time is capable of preventing such conditions from causing the untoward effects that almost invariably result if undetected and untreated. Full mouth roentgenograms are not always essential for such an exploratory examination. The full mouth bite wing film technique requiring only five exposures will reveal enough in a primary or early mixed dentition to make diagnosis possible. Regular periapical films can be added to the roentgenographic examination when areas beyond the bite wing film range are to be explored.

Surgical Techniques

It frequently happens that maxillary permanent canines fail to erupt on time. In many instances the clinical and roentgenographic findings may be negative. There is no mechanical hindrance, no impaction to prevent the eruption of the tooth. In the interest of good occlusion is it necessary to stimulate the timely appearance of these teeth lest the posterior teeth shift mesially and decreases the mesiodistal width of the space needed for well-positioned canines. When indicated, stimulation for eruption of such teeth can come from the simple surgical procedure of exposing the crown of the unerupted tooth. Immediately after the hard and soft tissues have been removed from the crown of the unerupted tooth a surgical cement is flowed into the wound. This prevents the formation of granulation tissue over the exposed crown and encourages peripheral healing. One week to ten days later the plug of cement is removed, leaving an unobstructed pathway for the eruption of the tooth. The tooth usually will erupt uneventfully.

Supernumerary Teeth

Supernumerary teeth are often found in the region of the maxillary central incisors. In this area they may prevent the eruption of one or both central incisors, they may be the cause of a midline diastema, or they may deflect the incisors into various malpositions. In any event the presence of supernumerary teeth is often attended by malocclusion.

Detection of these teeth is facilitated when they are erupted. The unerupted supernumeraries should always be looked for in those cases where a permanent central incisor is late erupting. Accompanying this condition the primary central incisor may or may not be retained.

In this situation the preventive phase of orthodontic service is adequate when supernumerary teeth are detected early and extracted promptly.

Retention of Primary Teeth

Primary teeth are sometimes retained too long and is such a condition is allowed to exist the erupting permanent teeth are frequently forced to erupt in malpositions or to be impacted. Either eventually favors the development of malocclusion which is preventable if these retained teeth as recognized as such and removed immediately. Here again roentgenograms are an invaluable diagnostic aid. To determine whether a primary tooth is being retained too long the information coming from tables of the chronology of permanent tooth eruption or primary tooth exfoliation should be applied carefully, realizing that individual variations in shedding and eruption times do exist, and that such variations may very well be within a normal range. The sequence, rather than the time of eruption may be a more reliable guide in deciding about retained primary teeth. The amount of root resorption of the primary tooth and the degree of permanent tooth calcification, as revealed by roentgenograms, are the most reliable guides. These factors

along with the stage of dental development as indicated by the number of permanent teeth erupted in the other three comparable quadrants of the mouth are sufficient to decide upon a policy of immediate extraction of the primary tooth or suggest waiting and observing. Of course, if the permanent successor is already visible in the oral cavity the primary tooth should be extracted immediately; for such a condition should never be allowed to exist unless a permanent tooth immediately mesial or distal to the involved area is congenitally absent.

Uncoordinated Root Resorption

Occasionally primary teeth are retained too long because the position of the succedaneous tooth is such as to assist resorption of only one aspect of a root or one root of multi-rooted primary teeth. This is said in full recognition of the fact that pressure of the erupting succedaneous tooth is not the only factor in resorption of the roots of primary teeth. When the ectopy of the succedaneous tooth fosters the prolonged retention of the primary tooth, careful clinical or roentgenographic examinations will discover it and extraction of the primary tooth will correct it.

Ankylosed Primary Teeth

Another possible cause of too long retention of primary teeth is an ankylosis between the root and alveolar bone. These so-called "submerged" teeth are diagnosed from the clinical signs that reveal them to be short of the normal occlusal plane. Continued vertical growth of the adjacent teeth and their alveolar processes gives the impression that the ankylosed tooth is submerging. If these teeth are not exfoliated at the proper time their retention may favor the development of malocclusion. Careful observation of these teeth, with timely extraction when necessary, may well be a valuable type of prophylactic orthodontic service.

Premature Loss of Primary Teeth

One of the most prolific causes of malocclusion is premature loss of primary teeth. The study of 100,000 school children of St. Louis, previously mentioned, showed that 81 per cent of the cases of malocclusion were caused by controllable factors and that 37 per cent of this total was due to premature loss of primary teeth.[3] A study of 5,000 Jackson, Michigan school children, from ages 5 to 12 years, revealed that 65 per cent of malocclusion found was caused by premature loss of primary teeth with no attempt to maintain the space.[4] While it is unfortunate that the early loss of primary teeth is so often the etiological factor in the complex malocclusion that eventually develops, it is fortunate that this eventuality need not inevitably follow. This is true for two reasons. First, every case in which primary teeth are lost prematurely is not, ipso facto, an indication for a space maintainer. Second, space maintainers can prevent the development of a malocclusion. Due to the fine interlocking relationships of the opposing teeth mesial and distal to the lost primary tooth, some edentulous spaces have maintained their mesio-distal dimension and occasionally increased it. Such cases, obviously, would need no space maintainers. In this instance the general practitioner has his preventive role to play in observing over a period of time, the patient who is a potential candidate for a space maintaining appliance. During the observational period the space should be measured at least once every six weeks. The measurements may be made from accurate casts of the patient's teeth or direct measurements taken with a millimeter gauge. If, during this time, the edentulous space maintains its mesio-distal width, an appliance is not indicated; further observation is. If, however, the space begins to close the dentist should insert a space maintainer.

Loss of Permanent Teeth

Loss of permanent teeth causes a type of malocclusion that is entirely preventable. In the young patient, where the conventional fixed or removable type of restoration is contraindicated, special appliances can be made to suit the condition. Such appliances may take the form of horseshoe shaped removable cases that replace one or more anterior teeth, or may be fixed restorations employing bands on the abutment teeth that support facings for the anterior part of the mouth and pontic pieces for the posterior. They are the so-called orthodontic bridges. It matters little

what form the temporary restoration takes; it matters much that the restoration is made and the teeth prevented from shifting into the edentulous space with a malocclusion resulting.

Developing Incisor Crossbites

In the case of incisor crossbites that develop in newly erupted central or lateral incisors, the general practitioner has an opportunity to intercept and prevent the malocclusion from becoming an established fact. Weber[2] describes a home treatment routine that will eliminate the anterior crossbite in several days. "The patients are given the following instructions: Place a tongue depressor blade on the lingual aspect of the maxillary incisor tooth or teeth that are locked posterior to the mandibular incisors. Close the teeth in centric, bringing a maximum amount of force to bear on the wooden tongue blade. With this force being maintained on the tongue blade, pull the blade backward as far as possible. Hold the tongue blade and the teeth in this relation while slowly counting to twenty-five. Release the pressure and then repeat the exercise. There should be a minimum of six sittings per day. This technique can be used effectively where the overbite is not deep, and the teeth to be moved across the occlusion are free to be tipped labio-lingually."

The prophylactic or preventive aspects of this treatment method may not be immediately apparent. However, many orthodontists believe that by correcting incisor crossbites at an early age the development of potential Class III dentofacial abnormalities is prevented.

It should be apparent from an enumeration of the preceding techniques, that for the general practitioner who would practice prophylactic orthodontics, there is indeed a fruitful field in which to labor.

Summary

The important role of prevention in the field of orthodontncs is in the realm of the general practitioner of dentistry. It is admitted that with the incidence of malocclusion being as high as it is in the school age population of our country (conservative estimates reveal that 25 per cent of this group is involved) no immediate program of correction is possible. The economic considerations and trained orthodontic personnel shortages are insurmountable obstacles existing at present.

The only possible solution to the problem of inadequate orthodontic service lies in the extension of preventive or prophylactic orthodontics. This places the general practitioner in a strategic position to help dentistry resolve one of its present shortcomings.

Some of the malocclusions that lie within the capabilities of the man in general practice to prevent are those caused by:

1. Thumb and finger sucking.
2. Lip biting, lip sucking, cheek sucking.
3. Loss of proximal contact.
4. Improper dental restorations.
5. Ectopic eruption of first permanent molars.
6. Impacted, unerupted, supernumerary teeth.
7. Too long retention of primary teeth.
8. Early loss of primary teeth.
9. Loss of permanent teeth.
10. Developing incisor crossbites.

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A Method of Preserving the Primary Dentition with the Minimum Effort

BERNHARD GOTTLIEB, HAROLD B. YOUNGER, and HARRY M. CRAWFORD
Baylor University College of Dentistry, Dallas, Texas

Editor's Note:

While the procedures advocated in the accompanying article are somewhat startling, when considered in the light of currently accepted technics, Dr. Younger and his associates have used them for the past eight years, and contend their experience fully supports the conclusions. In our opinion, the precipitation procedure must be followed by a well inserted restoration to qualify as an adequate dental service for a child.

A.E.S.

We have found that when open cavities in primary teeth are impregnated until the teeth are not sensitive to cold they may get hardened floors apparently by additional precipitation of calcium salts from the saliva into the dentinal tubules and possibly also into the matrix. After a few months these floors are found to be hard, such as is found in the floors of cavities with naturally arrested dentin caries, for instance in the occlusal surfaces of some first permanent molars. In cases of naturally arrested dentin caries the saliva apparently became of better quality concerning calcium precipitation, for some unknown metabolic reason, after the occlusal surface had been destroyed by caries and the previously softened floor of the cavity became hardened. In such cases of arrested dentin caries in the first permanent molars we invariably find caries immunity in all other intact teeth. It has been shown (1) that such dentin surfaces with arrested dentin caries exhibit higher calcification when examined by the grenz ray and it is obvious that the natural immunity in the remaining dentition is caused by obstruction of the invasion roads in the enamel by calcium precipitation.

In seeking for means of therapy or prevention it is always the best policy to find out how nature behaves in such instances. We would like to transform active caries in primary teeth into arrested dentin caries with a hard floor similar to the mentioned hardened occlusal surfaces in the first molars with arrested dentin caries.

If the quality of the saliva is poor so no automatic precipitation of calcium salts from the saliva occurs, we can stimulate this reaction by deposition of metallic precipitates into the invasion roads. We know from experience in different parts of the body that calcium is deposited in the presence of foreign bodies. The aforementioned hardening of the floors of impregnated cavities is an example in our own field. Also, in closed cavities, the circulating tissue fluid in the dentin hardens impregnated leathery dentin in a few months according to the same principle, a fact which has saved many pulps from becoming exposed.

We think that only the second primary molar is necessary as a space maintainer. The other primary teeth, and especially the six front ones, do not influence the growth of the alveolar bone, and therefore these primary teeth are not indispensable to arch development. We have to preserve the primary dentition in order to keep up the masticatory ability of the child until the permanent dentition has been put into function and in addition it is our primary duty to take care that no pulp becomes exposed. We cannot set a definite figure but we all know that a great number of pulp exposures occur in primary teeth during cavity preparation for fillings. If we eliminate cavity preparations we automatically eliminate a considerable number of possibilities to expose the pulp.

We first remove the overhanging enamel

margins of the cavity with chisel and grinding disk. We then remove the necrotic content of the cavity with brush and pumice and impregnate the exposed floors until they become insensitive to cold. Having furnished good access for the saliva by opening cavities liberally additional calcium deposition from the saliva takes place and the floors harden so that the pulps are protected and saved permanently. The fact that the front teeth space in the course of preparation for shedding shows that we do not have to be concerned with destroying the contacts here, they are eliminated by nature anyway. The most important thing is to render the affected tooth surfaces well accessible for the saliva.

The hardened floors of the cavities are a great comfort to the child, being neither sensitive to cold nor to touch. Pits which are easily prepared and filled should be treated as has been done before. But when we make it a principle to open liberally any open cavity, impregnate thoroughly and restore the original form only of the second primary molars as important space maintainers, we can use the great amount of time saved to take care of a far greater number of children than we possibly can if we adhere to the present principle to fill every carious cavity in a primary tooth and to consequently open the pulps in a large number of cases.

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EDITORIAL

THE GOLDEN EGG*

In contemplating the intensified technology of modern life, some observers wonder how long the individual will be able to maintain his own God-given dignity: will he ultimately be overcome by the cold-blooded soullessness of the machine. Accompanying this trend of mechanization can be seen everywhere synthetic and unreal substitutes for personalized endeavor and responsibility. A conspicuous professional example of such sterile lethargy is manifested by those who would callously shirk the child in the dental chair and use any expediently poor excuse as an easy way out. This short-sighted attitude, fraught with grave potentialities, has taken on a new false face: that dentistry for children is a specialty of practice and should be carried out by specialists. Nothing is further from the truth; and it is fitting that this distortion be examined for what it is worth and its shallowness exposed.

Dentistry for children is socially advantageous, economically logical and professionally intelligent. Because of these incontrovertible truths, and we need not labor the point, every general practitioner of dentistry is morally obligated to take care of the child as his public duty. If children are human beings, and we think they are, there is not one valid reason why they should be hung out on a limb and regarded as mutations and monstrosities. If one contends that dentistry for children is a specialty of practice, then it is just as sensible to say that those who deal mostly or entirely with grown-ups should be educated as specialists in dentistry for adults. But in the light of social-minded professional functioning, both contentions make no sense. Even further than that, the profession of dentistry already has too many specialties as it is; let us retain the valuable ones, and discard the contrived excrescences which make things harder and more baffling for the man on the street. What we do need is a better general practitioner. To effect that end we require inspired deans and faculties of undergraduate dental schools who are visualizing enough to proclaim that the survival of dentistry as an integrated profession lies in the complete acceptance of the child by the general practitioner; and we need undergraduate pedagogues courageous enough to state unmistakably and to teach comprehensively that the most useful general practitioner of the future will be the one primarily and functionally interested in children. Because of too much expensive restoration for adults and too little inexpensive prevention for children, we are face to face with lower level dentistry. This is a plain fact which denial and procrastination will not undo. The dental profession must revoke its outworn and inadequate pattern of practice by concentrating on preventive dentistry for children, commencing with the studied and conscientious care of the foundation teeth in the pre-school child. Dentistry for children is most definitely not a specialty of practice: the child belongs to every one. People are learning and time is running out. The goose that laid the golden egg is dead.

JOSEPH H. KAUFFMANN.

*From the Bulletin of the N. Y. State Society of Dentistry for Children.

AROUND THE COUNTRY

Our Canadian friend, Sandy MacGregor, is surely a busy fellow, lecturing in several cities in the United States and Canada the past few months. He is at present actively engaged in promoting the formation of one or more Canadian Units of the A.S.D.C.—a project long overdue! ★ ★ ★

Bill Orobko, another Canuck, from way up in Alberta, writes us several compliments about our Journal, which are always welcome! Elsewhere in this issue, Bill presents a question for our readers.

★ ★ ★

Ben Rabinowitch and his associates, Sam Bocarsky, Edith Straus and Irv Rubel, have moved to even swankier offices on Wilshire Boulevard in Los Angeles. Ben has been following a Hollywood diet of late, and maintains he no longer should be called "Bubbles"!

★ ★ ★

Our New York Unit, with Joe Kauffmann as Editor and Dan Gordon as Business Manager, is publishing a bulletin of the activities of that Unit. You will note that the Editorial in this issue of our Journal is from that Bulletin, attesting to the opinion we have that it's a mighty fine project. Editor Al, who spoke in Brooklyn in February, the same evening George Teuscher appeared before the First District in New York City, reports that he was impressed by the activity of the members of the New York Unit in that area.

★ ★ ★

And speaking of New York, both George Teuscher and Editor Al were guests of Harold Addelston during their brief stay. They report that Hal's story-telling ability is excelled only by the hospitality shown them by Hal and his charming family. Harold Klein, as usual, showed Al a few new gimmicks for his collection of "questionablia," and Sid Kronfeld vied with Hal in the story-telling!

★ ★ ★

Walter McBride appeared under the auspices of the Northern California Unit at the opening of Children's Dental Health Week in California on February 6. He appeared in a similar program in Reno on his return trip, and although he enjoyed both occasions, the "edge" was somewhat taken off the trip when he was "bumped" from his plane at Cleveland, Ohio, and had to take a night train into Detroit. Walter says he met Joe Hartsook at the Cleveland airport, returning from the Mid-West meeting in Chicago, and similarly "bumped" because of the weather. They consoled each other over drinks—of milk— in the port restaurant.

★ ★ ★

Mary C. Wright, Editor of the Massachusetts Unit, reports that Dr. Neville A. Booth of their Unit spoke to the Kiwanis Clubs of Cambridge and Norwood recently. His subject was "The Significance of National Children's Dental Health Day."

★ ★ ★

Editor Al reports the arrival of Melinda Louise on February 15, 1950. You folks can imagine the interruption in the routine of Al's life after 17 years of childless peace and quiet! The youngster had more hair at birth than Al has at 43—and he maintains her lung capacity is almost equal to his too! *(Editor's note: Louise and I appreciate the many notes and gifts our friends have sent in their surprise at this unexpected event! Despite the comments of many of my FRIENDS, I still maintain we are the perfect example of "Planned Parenthood"!!!)*

★ ★ ★

Polly Ayers, Director of the Bureau of Dental Health at Birmingham, Alabama, issued a comprehensive report of activities in 1949. Booklets, leaflets and models were prepared and distributed to teachers, P.T.A. groups, dentists and pediatricians. Greeting cards were sent to every Jefferson County 3-year-old, urging them to visit their dentist! Polly and her right hand, Grace Browning, certainly are examples of how to do things in the public health field of dentistry for children. ★ ★ ★

In Philadelphia, the Pennsylvania Unit, with Morris Kelner as Chairman, did some ground work for the future observance of

Children's Dental Health Day in that State. A parent education program embracing a series of lectures was presented. (See Unit News.)

★ ★ ★

As we go to press we learn of a Mid-Winter Meeting sponsored by our Washington State Unit on January 21 and 22. Mel Noonan will cover the meeting in the next Unit News. Suffice to say now that we're proud to note the activity of this recently organized group.

★ ★ ★

Cleveland's Children's Dental Health Day was its usual successful presentation, and although we've had no official report on the meeting, we understand it was the finest meeting they've had. Did you folks notice Norm Denner's picture in the papers recently with President Truman in recognition of National Children's Dental Health Day?

★ ★ ★

Bill Ream, of Akron, Ohio, sent us a copy of a full page spread about Akron's Children's Dental Health Week, where Walter McFall spoke to the opening session of the Week. The Akron Dental Society has been active in this field ten years, and deserves recognition for its pioneering in the dental care of children.

★ ★ ★

Harold Wittich, our abstemious friend in Minneapolis, sends us the following information about the continuation courses currently available at his University. "Dentistry for Children one week courses will be presented April 10-14 and June 19-23, 1950. The courses will consist of lectures, motion pictures, and clinical demonstrations.

The lecture courses will include child psychology, diagnosis, cavity preparations in primary teeth, economics, pulp treatment of primary teeth, restoration of fractured anterior permanent teeth, public health dentistry, dental caries, diet, growth and development, genetics, premedication, and use of local and general anesthetics.

The courses will be under the general direction of Dr. H. C. Wittich, assisted by Drs. C. W. Bierman, J. B. Bush, D. S. Chernausek, H. B. Clark, Jr., J. T. Cohen, R. A. Jensen, W. A. Jordan, Dorothea Radusch, Robert Rosenthal, S. R. Steadman, D. G. Ulander and D. H. Yock.

The fee for each course is $25.00 and enrollment is limited to 12 persons. Further information is available from Dr. Wittich at the University of Minnesota School of Dentistry.

★ ★ ★

Items for *Around the Country* should be addressed to Dr. Paul Sydow, 140 Union Avenue, Framingham, Massachusetts, our new Editor for the year 1949-50.

Note

A comprehensive survey of dental practice will be conducted during April by the Bureau of Economic Research and Statistics of the American Dental Association.

A detailed questionnaire will be sent to one-fourth of the dentists in the United States —including members as well as non-members of the A.D.A. — and all dentists who receive the questionnaire are urgently requested to cooperate in providing the requested information.

Purpose of the survey is to compile factual data regarding dental practice which can be used in the development of sound and practical dental health programs. Such data are needed particularly to counter-act the great amount of misinformation and unsupported propaganda that have been advanced in current debates on schemes for the solution of the nation's dental health problems.

The lack of definite information on dental practice in Great Britain placed the dental profession there at a serious disadvantage two years ago when it was engaged in negotiations with the British government regarding operation of the National Health Service Act.

The questionnaire, which will be in two parts, will be mailed to every fourth dentist on alphabetical lists. The first part will request general information about the practice of the individual dentist. The second will ask for specific information on the dentist's practice during the week of April 16 through 22, and will deal with the number of patients treated, the actual number of hours spent in chairside, laboratory and office work, and the various treatments provided.

No signature or identification of the questionnaire will be required. The completed forms will be used only for the compilation of factual data about groups of dentists.

Prevalence of Caries in Chicago Suburban School Children (7 to 14 Years of Age)

MAURY MASSLER, D.D.S., M.S.
and
KISHORE CHAND, B.D.S. (Pb.), D.D.S., M.S.
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Editor's Note:

While the following article may be too statistical to appeal to most of our readers, it does offer valuable information which should be helpful to all of us in our evaluation of other published material and reports. It is long and must be published in two issues. Doctor Chand was a student of Illinois' Graduate Division who is now in Bombay, India, as Professor of Dentistry, working with Doctor Schourie.

A.E.S.

Introduction

Dental caries is one of the most widespread diseases affecting man. Approximately 95 to 98 percent of the young adult population is afflicted to some degree by the disease (Day and Sedgwick, 1935; Klein and Palmer, 1938; Sloman and Sharp, 1940). Caries is primarily a disease of childhood. The highest caries attack rate occurs in children of primary school age (6-8 years) and during the teen-age (11-18 years) (Massler, 1944). The rate of *new* caries formation decreases rapidly after the thirtieth year (Day and Sedgwick, 1935; Bodecker, 1939).

Caries is a *cumulative* disease since destruction of the enamel and dentin are not self-reparative. Thus the effects of caries accumulate from one year to the next, ever increasing the number of tooth surfaces and individuals attacked. Since the ravages of decay are cumulative, the caries experience, past and present, i.e., the number of teeth or tooth surfaces attacked, can easily be observed and counted at any period in the life of man.

The *present* caries experience is recorded as the number of *decayed* (D) teeth or tooth surfaces present at the time of examination. The *past* caries experience can be observed in the form of fillings (F) or as extracted teeth, *missing* (M) because of severe caries attack. The sum, known as the DMF, is a measure of caries experience, past and present, in any given group of individuals.

From time to time, modifications of the DMF method of assessing caries experience have been suggested. Some modifications have been directed toward enlarging its scope and usefulness (DMF Teeth) while others have been directed toward increasing its accuracy (DMF Tooth Surfaces). Others (Salzmann, 1937; Klein and Palmer, 1938; Knutson, 1942; Massler and Schour, 1945) have indicated that the use of the first permanent molar as a measure of caries experience would further (1) its scope, and (2) its accuracy. This is especially true in the mixed dentitional period when the caries experience in the primary dentition is difficult to assess (Gruebbel, 1944).

The purpose of this investigation was to survey the caries experience in two groups of children using the first permanent molars as a measure of caries experience and to test the validity and usefulness of this method of assessment for epidemiologic surveys of caries experience. A relatively new caries index method which considers the *average degree of caries per carious surface* was tested and is here offered to supplement the standard DMF index.

In addition to the primary objectives, data obtained from a survey conducted on the

same group of children one year later, by another investigator, were compared with the present findings in order to determine the variability in DMF that obtains from different examiners.

Review of Literature

Clinically, the problem of caries in a single individual revolves about the investigation of the etiologic factors in the disease and methods of treatment. From the public health point of view, however, the prevalence and distribution (epidemiology) of the condition must first be determined in order that future studies might be directed toward the *prevention* of caries.

Many studies have been initiated to clarify the epidemiologic aspects of the caries problem. Probably the most important single impetus in this direction was provided by the clarification of a quantitative method of measuring the caries experience in large groups of individuals. This method is called the DMF measure of caries experience. The U.S.P.H.S. has not only initiated studies in this direction, but has also contributed valuable data.

Epidemiologic Methods Used in Measuring Caries Experience

1. Number of Persons Affected (Prevalence of Caries). The first method usually employed in epidemiologic surveys of the occurrence of any disease has been to determine the proportion of the population attacked by the disease (percentage of persons affected). This is relatively simple, but accurate only if a large sample is investigated. The simplest method of estimating the prevalence of caries in large groups of children or adults would be, therefore, to determine the percentage of persons affected by the disease.

The earliest study of dental decay in this direction was conducted by Kiernan in 1892 on 154 children, 6 to 12 years of age. He found that the number of children affected by caries was 10-4/7 percent, a somewhat low figure in the light of more recent studies. Kiernan also listed the percentage of children affected by caries at the different ages from 7 to 12 years, but did not indicate the method of examination nor the statistical accuracy of his observations.

Since that time many studies have been conducted in many parts of the world to determine caries prevalence. All studies made in the United States agree that caries afflicts between 95 to 99 percent of the adult population (Day and Sedgwick, 1935; Klein and Palmer, 1938; Cheyne and Drain, 1940; Sloman and Sharp, 1940). Klein and Palmer, in 1941, summarized the available data on the prevalence of caries in different groups throughout the United States.

2. Number of Teeth Affected (DMF Teeth). An estimate of the number of persons affected by caries does not, of course, indicate the *amount* of caries present, since a person with one carious tooth receives the same statistical weight as one with rampant decay. The next logical step in the quantitative evaluation of caries experience in large groups of persons was, therefore, to count the number of carious teeth in each person. From such records, it was simple to determine (1) the total number of carious teeth in any population group and (2) the average number of carious teeth per person.

While some such method of evaluation was proposed as early as 1924 by Morelli, this approach found its culmination in the method of counting decayed (D), missing (M) and filled (F) teeth, as suggested by Klein and Palmer in 1938. Klein and Palmer (1938) applied the usual criteria of epidemiologic methods to the caries problem and pointed out that data on morbidity (decayed and filled teeth) and mortality (extracted teeth) can be evaluated quantitatively to obtain an assessment of caries experience in a manner similar to the epidemiologic assessment of the prevalence of tuberculosis and other diseases.

This simple step was an important contribution to dental research. Research in caries *prevention* did not materialize until epidemiologic research had accumulated enough data to show the different rates of caries attack in different areas of the country. It was only after such data had been accumulated that it was realized that fluoride endemic areas experienced less decay than non-fluoride areas.

3. Number of Tooth Surfaces Affected (DMF Tooth Surfaces). From the clinical point of view, it was apparent that merely counting the number of teeth affected by caries was a relatively crude method of estimating the caries experience in any given mouth since some teeth (molars) could suffer from multiple attacks by caries on various surfaces (occlusal, proximal, buccal or lingual), while other teeth (incisors) were liable only to proximal decay. Bodecker and Bodecker (1931) took this important factor into account by counting the number of *tooth surfaces* attacked by caries rather than the number of teeth alone and proposed a "Modified Index of Dental Caries." They suggested a method of setting up caries indices based on the number of surfaces involved in twenty of the thirty-two permanent teeth; those which suffered rarely from dental caries (cuspids, lower incisors, and third molars) were excluded. The reason for this exclusion was the fact that the twenty teeth used in the final calculation had exactly 100 surfaces and hence the number of the affected surfaces also indicated the percentage of tooth surfaces affected by caries. Experience showed that this method did not give a precise picture of caries experience since in severe attacks by caries the very teeth excluded were affected and yet were not counted.

In 1936 and again 1939, Bodecker offered further refinements to the method of counting carious and filled tooth surfaces (including an estimation of the number of carious surfaces in teeth already extracted or crowned) and presented the whole as a "Modified Dental Caries Index" (180 caries susceptible surfaces on 32 permanent teeth). Klein and Palmer (1938) incorporated Bodecker's suggestions into their own method by counting the number of carious tooth surfaces (DMF Tooth Surfaces) as well as the number of carious teeth (DMF Teeth).

Extracted Teeth (missing because of caries). A tooth which had been extracted because of deep caries attack presented a problem when it became necessary to count the number of surfaces attacked by caries. Bodecker (1936) suggested that five carious surfaces be assigned to each carious tooth remaining in the mouth with carious roots on the basis that such teeth actually suffered from caries attacks on five surfaces. Teeth already extracted and teeth with full crowns were arbitrarily counted as having had three carious surfaces. Later Bodecker (1939) after a group discussion with Professors Crawford, Hartman, Holliday, McBeath, Rowe and Ziskin reiterated the valuation of three carious surfaces for crowned teeth and three for teeth extracted because of caries, before 35 years of age.

Klein and Palmer (1938), however, stated that if a one-surface involvement could affect the pulp and necessitate extraction of the tooth, such virulence could be considered equivalent to an attack on five surfaces. Accordingly, in their calculations, extracted teeth were considered to have five surfaces involved. Wessels and Cheyne (1947), on the basis of the examination of 377 extracted teeth, suggested assigning 4.3 carious surfaces to each extracted tooth. Obviously, an incisor exposed and lost by caries might exhibit only one carious surface, while a molar might exhibit five carious surfaces. Schour and Massler (1945) suggested the use of four carious surfaces on the basis that clinical examination of molars in Italian children revealed four such surfaces attacked prior to extraction.

Ratio of DMF Teeth to DMF Tooth Surfaces. In 1946, Boyd and Cheyne, in a study of the caries experience of Iowa children, suggested the use of the ratio of carious teeth to carious tooth surfaces as a method of comparing caries experience in different groups of children. By the use of this proportion, it was possible to state not only the average number of teeth and tooth surfaces attacked by caries per person, but also the average number of carious surfaces per carious tooth.

4. Degree of Caries (A.C.F.). The methods of counting DMF Teeth and DMF Tooth Surfaces fail to take into account two very important characteristics of the caries process.

a. A single carious molar does not have the same clinical significance as a single carious incisor. Statistically, this factor should

be included in the evaluation of caries experience.

b. Similarly, a superficial lesion which is given the same numerical value as a deep carious lesion, fails to adequately express the rate of attack by caries.

Statistically, as well as clinically, different weights should be attached to a molar with a superficial occlusal pit cavity and to a deep cavity in an incisor. For the reasons given above, the DMF method of counting caries experience is useful only when applied as *an epidemiologic method to large groups.* It fails to adequately express the individual differences and the important clinical details necessary to clinical practice. For the assessment of the *individual* patient, clinical records and judgment are still superior to any single epidemiologic method.

As early as 1934, Mellanby and, in 1935, Day and Sedgwick recognized the limitations of simply counting carious teeth and carious tooth surfaces and attempted to include the points made above into a more accurate numerical system of assessing caries experience. In order to estimate the degree as well as the amount of caries, each carious cavity was scored as to its size and extent according to some arbitrary but well defined scale and arrived at a figure (the average caries figure). This figure therefore attempts to evaluate the *degree* of caries as well as the number of tooth surfaces or teeth involved.

The Average Caries Figure has been used chiefly by English workers. Mellanby (1934), King (1938), Weaver (1944) and Mellanby (1946) used a three point scale for estimating degree of caries for each tooth. Marshall Day (1935) and Knowles (1948) used four points as a maximum for each tooth. Marshall Day refers to his index as the A.C.F., and Knowles as the A.C.V. Index.

Jackson (1948), in a preliminary investigation, clinically assessed the relative values of the A.C.F. Index as used by Mellanby, King and Whyte; and the Bodecker Index as described in 1931, using the DMF as a standard. The coefficient of correlation between the DMF Index and the Bodecker Index was 0.942 ± 0.242; between the DMF Index and the A.C.F. Index was 0.927 ± 0.02. He suggested that the Bodecker Index and the A.C.F. Index offer no great advantage over the simpler DMF Index as a measure of caries in epidemiologic surveys, since, *when large numbers are considered,* they provide no further information than that given by the DMF.

5. Other Epidemiologic Methods. Percentage of Teeth Affected. East and Pohlen (1941) and others (Roesler, 1931; Pohlen, 1938) have suggested another method of expressing the prevalence of caries as the percentage of teeth affected rather than as the percentage of children affected. This regards the individual tooth as the population unit rather than the person. While this method of expressing caries prevalence has some merit, it has entirely different caries susceptibility rates and, therefore, this method gives a somewhat erroneous idea of the prevalence rate.

Morelli's Index. In one of the early attempts to evaluate caries experience, Morelli, (1924) suggested "A Quantitative Caries Index for the Teeth." He used carious and filled teeth in his index to express:

1. The number of existing teeth
2. The number of carious teeth
3. The number of missing teeth

He used the quantitative measure (J) that is composed of a basic number (A) and a coefficient (n); thus $J = An$. He arrived at a basic number (A) by dividing the number of existing teeth by the number of carious teeth or coefficient (n). For example,

$$\frac{\text{Existing teeth} = 24}{\text{Carious teeth} = 6} = 4 \text{ basic number}$$

Thus, the quantitative carious measure was expressed as 4_6. The two multiplied together equal 24, or the number of existing teeth. This subtracted from the total complement of teeth (32) equals the number of missing teeth. Example:

$$32 - 24 = 8.$$

This index does not take into consideration the development of new caries on different surfaces of the same tooth, or the extension of the existing cavity. Therefore, on repeated examination or application of this index to the same patient, no visible change could be apparent, until another tooth was lost.

Susceptibility Caries Index. This index was suggested by McBeath and Zucker (1938)

to show the number of tooth surfaces attacked by caries during a specified time of 100 days. In order to compare the rapidity with which caries increases in two individuals, it was necessary to reduce all indices to a common denominator of time. Example:

3 new caries areas developed during a period of 365 days.

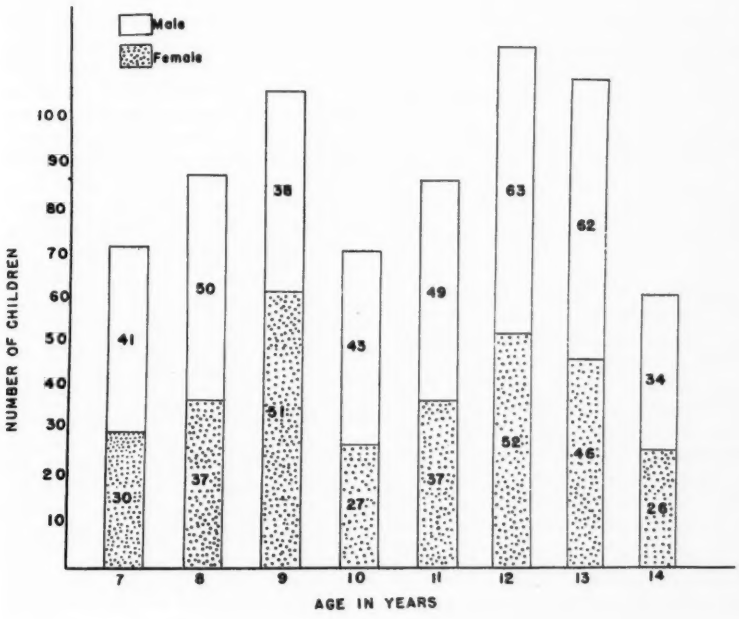
$3 \div 365 = 0.0082$ areas, increase for one day.

$0.0082 \times 100 = 0.82$ areas, increase in caries per 100 days.

This was essentially the same as the "Modified Caries Index," except that 100 days was used as the basis of calculation.

Tooth Mortality Rate. The tooth mortality rate index, reported by Knutson and Klein (1938), was determined by counting the number of missing (extracted) permanent teeth, and permanent teeth requiring extraction. The sum divided by the number of children and multiplied by 100 gave a tooth mortality rate of the number of lost teeth per 100 children.

There is an excellent index in the hands of the epidemiologist since the teeth mortality rate correlates very highly with the DMF rate (Knutson and Klein, 1938; Knutson, 1944), and is a much simpler and quicker method of estimating the relative caries attack rates in large groups of persons.



Prediction Formulae. Knutson (1944) suggested another method of estimating caries experience (in this case DMF teeth) without the necessity of examining all the teeth of every person in a large group. He showed that the relation between the number of caries-free persons and the number of DMF teeth is fairly constant and can be expressed in the form of a prediction formula. This method is obviously an approximation and useful only in large group observation.

In a similar fashion, Knutson and Klein (1938) had suggested that counting only extracted first permanent molars would serve as a good index to caries experience in large groups since (a) tooth mortality is directly related to the caries attack rate, and (b) the first permanent molars represent 87 percent in the lower jaw and 64 percent in the upper jaw, of the total caries experience.

6. Caries Experience in the Mixed Dentitional Period (of Primary teeth). While the caries experience of any given permanent tooth is easily observed and recorded, the problem becomes more complicated when one attempts to determine the caries experience of the primary teeth during the mixed dentitional period. The entire problem of evaluating caries experience of the primary teeth has been well reviewed by Gruebbel (1944).

Gruebbel (1944) and others (Cohen, 1937; Klein and Palmer, 1938) point out the difficulty of determining whether a given missing primary tooth should be evaluated as "lost by caries" or "normally exfoliated." The short life span of these teeth (6 to 8 years) also makes evaluation of caries experience difficult. Gruebbel (1944) suggested, therefore, that caries experience of the primary teeth be recorded only as decayed and filled teeth (df teeth and df tooth surfaces).

7. Examination of the First Permanent Molars as a Measure of Caries Experience. Susceptibility of Different classes of Teeth to Carious Attack. Clinically, it was apparent at a very early date that not all classes of teeth are liable to the same degree or amount of attack by caries (Kiernan, 1892). Tomes (1848), Cheesebrough (1864) and Parker (1874), examining extracted teeth, recognized that the first permanent molars are most liable to attack by caries and that the lower incisors are relatively immune. Many investigators (Day and Sedgwick, 1935; Salzmann, 1937; Klein and Palmer, 1938; Cheyne and Drain, 1940; and Knutson, 1942) have repeatedly established these facts on a more accurate statistical basis.

In 1938, Knutson, Klein and Palmer evaluated the relative susceptibility of the various classes of teeth to attack by caries from data obtained from 4,416 children of Hagerstown. Cheyne and Drain (1940) demonstrated the fact that the four first permanent molars contributed 88 percent to the total caries experience (DMF Teeth) while the two lower first permanent molars alone contributed 65.8 percent to the total number of DMF Teeth.

On the basis of such findings, Massler and Schour (1947) suggested the use of the first permanent molars as a measure of caries experience, particularly during the mixed dentitional period. The examination of the first permanent molars alone, rather than the entire dentition, for the epidemiologic evaluation of caries attack rates was, therefore, undertaken in this study.

The examination of the first permanent molars as a measure of caries experience has been proposed on the following basis:

1. The first permanent molar is the tooth most susceptible to attack by caries because of (a) its anatomical configuration and (b) its early eruption into the oral cavity and exposure to carious attack. Knutson, Klein and Palmer (1938), analyzing the relative incidence of caries in the different morphologic types of teeth, proved that not only may certain individuals be classed as relatively susceptible or immune to caries, but that the different classes of teeth could also be classed as susceptible or immune. They and many others (Day and Sedgwick, 1935; Salzmann, 1937; Cheyne and Drain, 1940; Knutson, 1942) have shown conclusively that the molars have the highest order of caries susceptibility. The upper incisors, upper first and second bicuspids and lower second bicuspids have an intermediate order of susceptibility, and finally the lower incisors, lower cuspids, lower first

biscuspids, and upper cuspids have the lowest order of susceptibility.

2. In the majority of mouths, therefore, the first permanent molars experience a high percentage of the total caries attack. Klein and Palmer (1938) showed that 88 percent of the total number of carious teeth and 77 percent of the total number of carious tooth surfaces were located in the four first molars. Wessels and Cheyne (1947) in a study on extracted teeth found that while the mean number of DMF tooth surfaces for all permanent teeth was 4.47, the mean for first permanent molars alone was 4.34. In other words, only 0.13 surfaces were attacked on other teeth. Boyd and Cheyne (1946) found in 100 Iowa children that 62 percent of all carious tooth surfaces occurred on the first permanent molars. Further, Cheyne and Drain in 1940, and Wessel and Cheyne in 1947 observed that the loss of the other permanent teeth was insignificant in comparison to that of the first molar, 85 percent of all extracted teeth being first permanent molars. From such figures it can readily be seen that the caries experience of the first permanent molar is more than an adequate index of the caries experience of all the teeth combined.

A very important advantage in the use of the first permanent molars as an index of caries experience is also the fact that it erupts at an early age (6 years±9 months). Studies on caries prevalence can thus begin at the age of 6 instead of the age of 12 years. This makes the use of the first molars especially valuable during the mixed dentitional period — a period during which caries experience data are difficult to obtain (Gruebbel, 1944). Another factor to be considered is the fact that since caries experience is *cumulative*, the first permanent molars, in the same child, express more correctly the influence of age on caries experience than do any of the permanent teeth which erupt later. Salzmann, 1937; Knutson, 1942 — as quoted by Massler and Schour, 1945).

3. Because of the inaccuracies inherent in assessing caries experience of the primary teeth during the mixed dentitional period, Salzmann (1937), Cheyne and Drain (1940), Massler and Schour (1947) and Knutson (1948) have suggested the use of the first permanent molar as an index of caries experience during (and after) the mixed dentitional period since (a) it is a permanent tooth, (b) it appears in the mouth at the beginning of the mixed dentitional period (approximately 6 years of age), and (c) should remain throughout the life of the individual.

4. Another great advantage in using the first permanent molars as a measure of caries experience in large scale epidemiologic studies is that it is quicker, simpler, and more *accurate* to examine four molar teeth than 28 permanent teeth. These advantages are not inconsiderable in large scale studies where time and a large sample are important factors. In addition, radiographic examination is not nearly as necessary for the examination of caries in four teeth as in 28 teeth.

5. Finally, and by no means least important, is the fact that *comparisons* of caries experience between two or more groups is much more valid statistically if *the caries experience of one class of tooth is compared rather than the comparison of four different classes of teeth with widely varying caries susceptibilities and experience.* This fact, that comparison of the number of DMF molars with molars; biscuspids with bicuspids, cuspids with cuspids and incisors with incisors is more accurate and, therefore, more valid than comparison of the DMF of all teeth combined, is often overlooked. Since each class of tooth tends to have an entirely different DMF number, comparison of the total DMF might theoretically lead to confusion as in the following hypothetical example: Group I — 4 DMF Teeth (all first molars); Group II — 4 DMF Teeth (all upper incisors).

8. Outline of Epidemiologic Methods Used In Measuring Caries Experience

METHOD	AUTHORS
I. Counting the number of persons affected. (Prevalence of Caries) (Incidence of Caries)	Kiernan, 1892
II. Counting the number of teeth affected.	Tomes, 1848 Cheesebrough, 1864 Parker, 1874
III. Counting the number of teeth affected per person. (Caries experience) (DMF Teeth)	Morelli, 1924 Klein and Palmer, 1938
IV. Counting the number of tooth surfaces affected per person. (Dental Caries Index) (Caries Experience; DMF Tooth Surfaces) (Modified Dental Caries Index)	Bodecker and Bodecker, 1931 Bodecker, 1936 Klein and Palmer, 1938 Bodecker, 1939
V. Counting the degree of caries per tooth. (Average Caries Figure) (A.C.F.)	Mellanby, 1934 Day and Sedgwick, 1935 King and Whyte, 1938 Weaver, 1944 Mellanby, 1946
VI. Counting the percentage of teeth affected.	East and Pohlen, 1941
VII. Prediction Formulae	Knutson, 1944
VIII. Caries Experience in the Mixed Dentitional Period. (df Primary teeth)	Gruebbel, 1944
IX. Using the First Permanent Molar as an Indicator of Total Caries Experience.	Salzmann, 1937 Knutson and Klein, 1938 Massler and Schour, 1947

Effects of Various Factors on Caries Experience

A vast literature has accumulated on the relation of various intra-oral and extra-oral factors on the rate of caries attack. These have been, for the most part, attempts to elucidate the effects of various etiologic and contributory factors on the initiation and rate of the caries process.

1. Age. It is quite clear from many studies that caries experience increases with age (Day and Sedgwick, 1935; Knutson, Klein and Palmer, 1938; Cheyne and Drain, 1940; Massler and Schour, 1945).

It is also clear from other studies that the ratio of caries attack (initiation of new lesions per year of age) is not a smooth, uniform increase but that periods of exacerbations in caries activity can be observed at 6 to 8 years in the primary teeth (Knutson and Klein, 1938; Cheyne and Drain, 1940) and in the teen-age period in the permanent teeth (Massler, 1944).

2. Sex. A significant difference in caries attack rate between males and females has been reported by Stoughton and Meaker (1932), Klein and Palmer (1938), Hollander and Dunning (1939), Cheyne and Drain (1940) and Sloman (1941). In general, girls show more DMF teeth and tooth surfaces than do boys at comparable age levels. Klein and Palmer (1938) explains this difference on the basis that teeth erupt earlier in girls than in boys and therefore exposed to caries attack for a longer period of time. Sloman (1941) believes that some other factor may be operating in addition to the time of intra-oral exposure.

3. Other Factors. Many other factors such as diet, sunlight, economic status, dental care, race, etc., have been suggested as contributory to the caries experience by different investigators. The relation of fluorides in the water supply to the caries experience is already well known. However, since such factors have not been considered in this study, their effects will not be reviewed here.

(To be concluded in next issue)